MITSUBISHI ELECTRIC

Integrated FA Software

CW Workbench

Operating Manual

MITSUBISHI
Integrated FA Software
CW Workbench Powered by WIND RIVER
Engineering tool for C Controller module
Copyright Wind River Systems Inc. 2010. All rights reserved.

Powered by WIND RIVER	CW Workbench was jointly developed by Mitsubishi and Wind River Systems, Inc.

Integrated FA Software

SW1DND-CWWLQ12-E
SW1DND-CWWLQ24-E

●SAFETY PRECAUTIONS●

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.
The precautions given in this manual are concerned with this product only. For the safety precautions of the programmable controller system, refer to the user's manual for the CPU module used.

In this manual, the safety precautions are classified into two levels: "⚠WARNING" and "⚠CAUTION".

⚠WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions under "⚠ CAUTION" may lead to serious consequences.
Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

⚠WARNING

- For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely.
  (1) Changing data of the running C Controller module from the development environment (personal computer) connected
  (2) Changing the operating status
  (3) Operation from the development environment (personal computer)
  Especially, in the case of a control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a communication failure.
  To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a communication failure.

[Startup and Maintenance Precautions]

⚠ WARNING

- For the following controls, configure an interlock circuit in the user program to ensure that the entire system will always operate safely.
  (1) Changing data of the running C Controller module from the development environment (personal computer) connected
  (2) Changing the operating status
  (3) Operation from the development environment (personal computer)
  Especially, in the case of a control from an external device to a remote C Controller module, immediate action cannot be taken for a problem on the C Controller module due to a communication failure.
  To prevent this, configure an interlock circuit in the user program, and determine corrective actions to be taken between the external device and C Controller module in case of a communication failure.

[Startup and Maintenance Precautions]

⚠ CAUTION

- Before performing online operations (especially, program modification, forced output, and operation status change) for the running C Controller module from the peripheral connected, read relevant manuals carefully and ensure the safety.
  Improper operation may damage machines or cause accidents.

●CONDITIONS OF USE FOR THE PRODUCT●

(1) Mitsubishi C Controller system ("the PRODUCT") shall be used in conditions;
i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.
MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.
("Prohibited Application")
Prohibited Applications include, but not limited to, the use of the PRODUCT in;
- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

INTRODUCTION

Thank you for purchasing CW Workbench.
This manual explains about the product.

Before using this product, please read this manual and the relevant manuals carefully and develop familiarity with the functions and performance of CW Workbench and applicable modules to handle the product correctly.

RELEVANT MANUALS

The manuals related to the product are listed below.
Please place an order as needed.

Manual <Manual No. and model code>	Description
C Controller Module User's Manual (Hardware Design, Function Explanation) <SH-080766ENG, 13JZ17>	The manual describes the system configuration, specifications, functions, handling methods, wiring, and troubleshooting of Q12DCCPU-V (Basic mode) and Q06CCPU-V.
C Controller Module User's Manual (Utility Operation, Programming) <SH-080767ENG, 13JZ18>	The manual describes the installation/uninstallation, utility operation, instructions, and programming of Setting/Monitoring Tools for the C Controller Module (SW3PVC-CCPU).
MELSEC-Q C Controller Module User's Manual <SH-081130ENG, 13JZ75>	The manual describes the system configuration, specifications, functions,handling methods, wiring, troubleshooting, and programming and function of C Controller module (Q24DHCCPU-V, Q24DHCCPU-VG, Q24DHCCPU-LS, and Q12DCCPU-V (Extended mode)).
Setting/Monitoring Tools for the C Controller Module Operating Manual <SH-081131ENG, 13JU76>	The manual describes the system configuration and operation method of Setting/Monitoring Tools for the C Controller Module (SW4PVC-CCPU).
CW-Sim Operating Manual <SH-081159ENG, 13JU77>	The manual describes the system configuration, specifications, functions, and troubleshooting of CW-Sim.
Wind River Workbench 3.2 manuals	The manuals describe specifications, usage methods, troubleshooting, and relevant documents of Wind River Workbench 3.2 that is the base for this product. Refer to the manuals for the same functions as Wind River Workbench. A PDF file of the manuals is stored on the DVD-ROM disc of the product.

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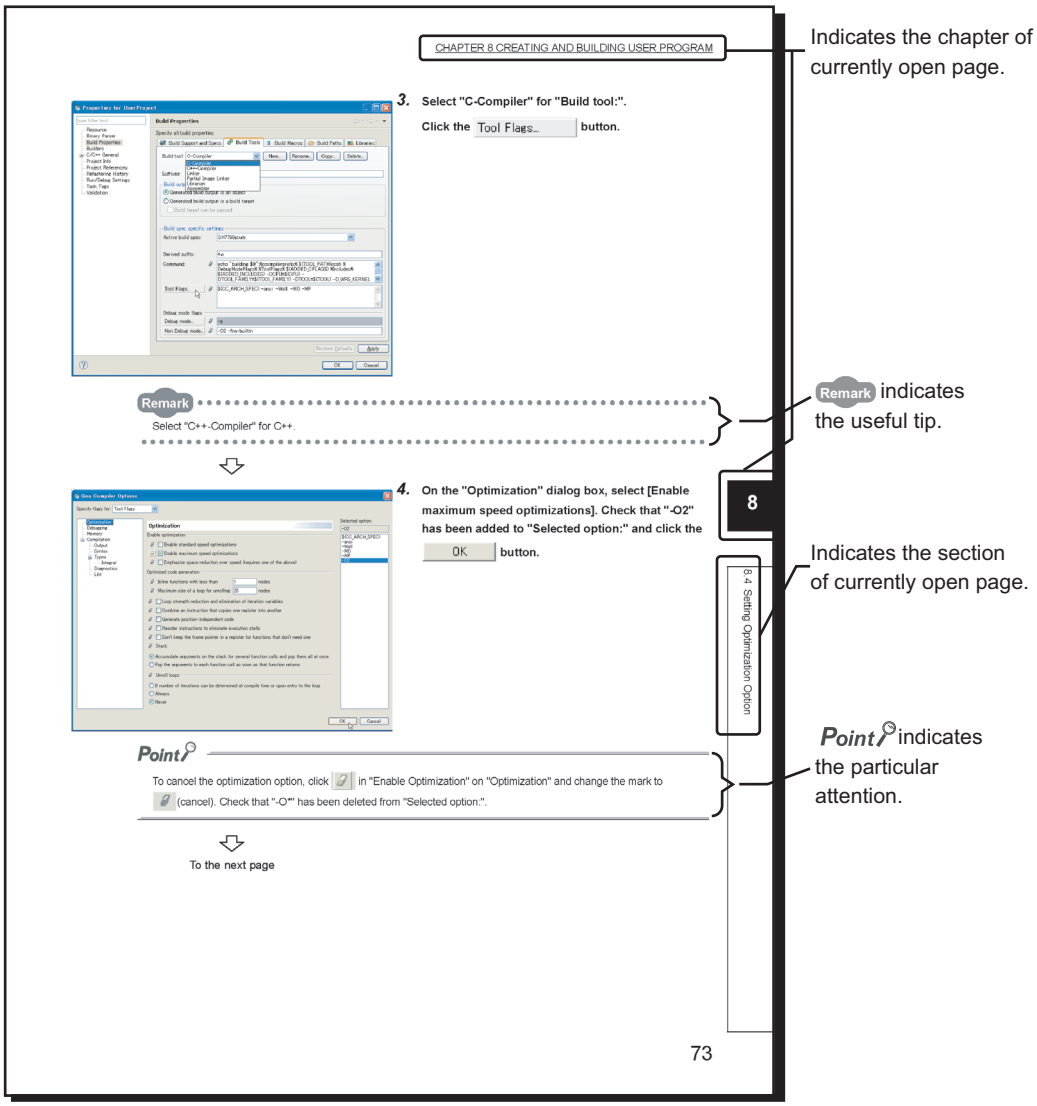
MANUAL PAGE ORGANIZATION

The following illustration is for explanation purpose only, and should not be referred to as an actual documentation.


CHAPTER 8 CREATING AND BUILDING USER PROGRAM
Indicates the chapter of currently open page.
3. Select "C-Compiler" for "Build tool:".
Click the Tool Flags... button.
Remark
Select "C++-Compiler" for C++.
Remark indicates the useful tip.
4. On the "Optimization" dialog box, select [Enable maximum speed optimizations]. Check that "-O2" has been added to "Selected option:" and click the OK button.
8
8.4 Setting Optimization Option
Indicates the section of currently open page.
Point
To cancel the optimization option, click in "Enable Optimization" on "Optimization" and change the mark to (cancel). Check that "-O" has been deleted from "Selected option:".
Point indicates the particular attention.
To the next page
73

Operating procedures

Three styles of descriptions are used in this manual as below:

(1) When there is only one operation

Menu bar [Help] ⇨ [Help Contents]

(2) When there are steps

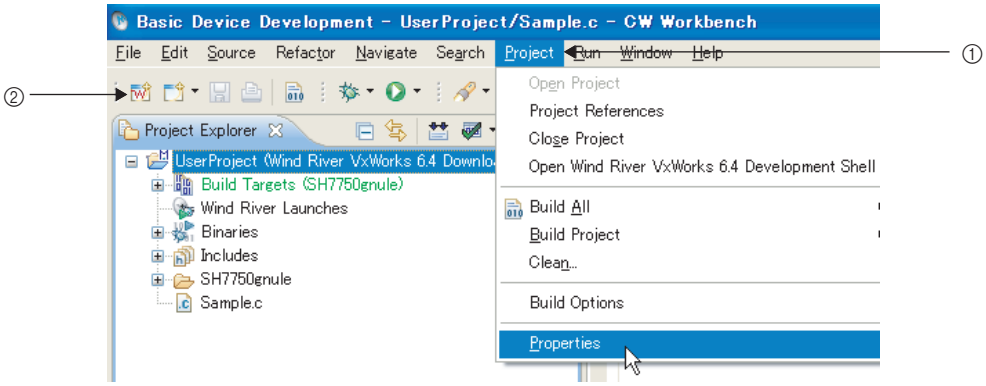
1. **Copy the created source file to the current folder of a project to be added.**
2. **Select the project to be added on the "Project Explorer" window.**

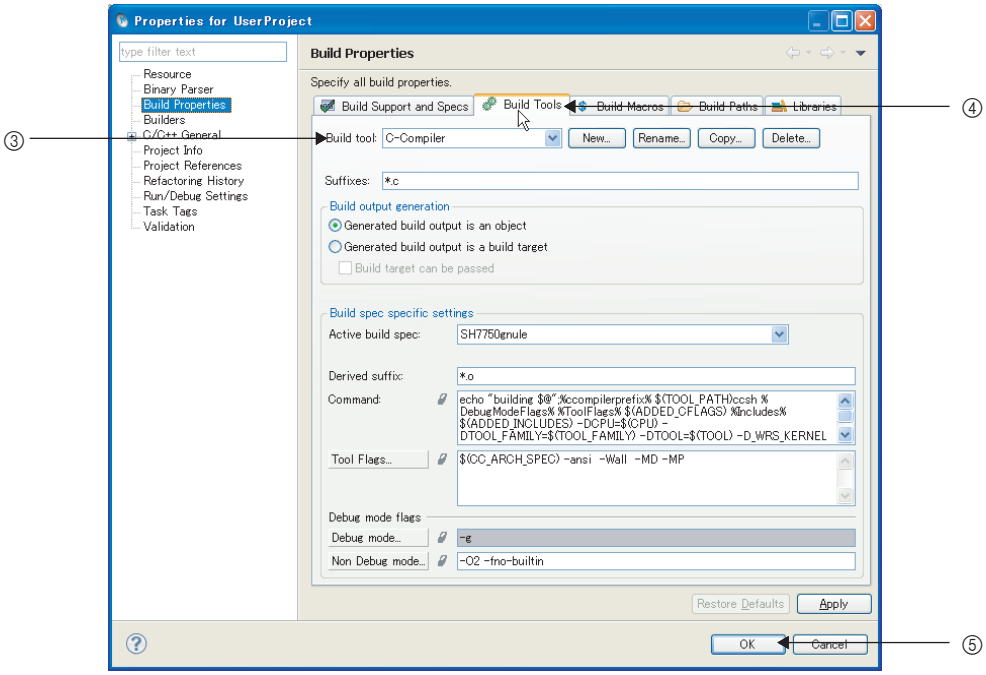
(3) When there are multiple operations

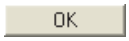
- Enter a folder name of the installation location and click the OK button.
- A folder can be selected by clicking the Browse... button.

Symbols used in this manual

The following shows the symbols used in this manual with descriptions and examples.





No.	Symbol	Description	Example
①	[ ]	Menu name on a menu bar	[Project]
②		Toolbar icon	
③	" "	Screen name or item name on a screen	"Build tool:"
④	<< >>	Tab name on a screen	<<Build Tools>>
⑤		Button on a screen	
–		Keyboard key	
–		Reference page	-
–		Reference manual	-

GENERIC TERMS AND ABBREVIATIONS

Unless otherwise specified, this manual uses the following generic terms and abbreviations.

Generic term/abbreviation	Description
Q24DHCCPU-V	The abbreviation for Q24DHCCPU-V C Controller module.
Q24DHCCPU-VG	The abbreviation for Q24DHCCPU-VG C Controller module.
Q12DCCPU-V	The abbreviation for Q12DCCPU-V C Controller module.
Q12DCCPU-V (Basic mode)	Status that Q12DCCPU-V is initialized with the basic mode For Q12DCCPU-V (Basic mode), refer to the following manual. C Controller Module User's Manual (Hardware Design, Function Explanation)
Q12DCCPU-V (Extended mode)	Status that Q12DCCPU-V is initialized with the extended mode For Q12DCCPU-V (Extended mode), refer to the following manual. MELSEC-Q C Controller Module User's Manual
C Controller module	The generic term for Q24DHCCPU-V, Q24DHCCPU-VG, and Q12DCCPU-V.
Setting/monitoring tools for the C Controller module	The generic term for Setting/monitoring tools for the C Controller module shown below. • Q24DHCCPU-V, Q24DHCCPU-VG, and Q12DCCPU-V (Extended mode) SW4PVC-CCPU • Q12DCCPU-V (Basic mode) SW3PVC-CCPU
VxWorks	The real-time operating system manufactured by Wind River Systems, Inc.
Wind River Workbench	The generic term for Wind River Workbench manufactured by Wind River Systems, Inc.
CW Workbench	The engineering tool for C Controller module. The generic term for OEM products of Wind River without the runtime analysis tool and simulation functions (VxSim) of Wind River Workbench; a subset of Wind River Workbench. • Q24DHCCPU-V and Q24DHCCPU-VG SW1DND-CWWLQ24-E, SW1DND-CWWLQ24-EZ, SW1DND-CWWLQ24-EVZ • Q12DCCPU-V SW1DND-CWWLQ12-E, SW1DND-CWWLQ12-EZ, SW1DND-CWWLQ12-EVZ
VxSim	The generic term for the VxWorks simulator functions of Wind River Workbench.
CW-Sim	The abbreviation for the VxWorks simulator that can operate the C Controller module program on a personal computer with CW Workbench installed, without connecting to the actual machine (target).
CW-Sim Standalone	The abbreviation for the VxWorks simulator that can operate C Controller module program even on a personal computer without CW Workbench installed.
Personal computer	The generic term for personal computers where Windows® operates

TERMS

Unless otherwise specified, this manual uses the following terms.

Term	Description
Dedicated function library	The generic term for bus interface function, MELSEC data link function, and C Controller module dedicated function.
Bus interface function	Dedicated function library offered by C Controller module. This function is used when executing the following: • Input from or output to I/O modules controlled by the C Controller module • Access to the buffer memory of an intelligent function module • The readout or control of the C Controller module status
MELSEC data link function	Dedicated function library offered by C Controller module. This function is used when writing to/reading from a device of other programmable Controller CPUs connected via network or configured with multiple CPUs.
C Controller module dedicated function	Dedicated function library that controls C Controller module. This function is used when reading the C Controller module status, controlling LED, and accessing to resources such as time and battery backup RAM. This function can be used for Q24DHCCPU-V and Q24DHCCPU-VG C Controller modules. It can not be used in Q12DCCPU-V C Controller module.
URL	The abbreviation for Uniform Resource Locator. This address indicates a location of information resources (such as text and images) on the Internet.
Eclipse	An open source software development environment comprising an integrated development environment written in Java

PRODUCT ORGANIZATION

The following shows the C Controller-compatible software.

○: Applicable, ×: Not applicable

Supported software	C Controller			
	Q24DHCCPU-V Q24DHCCPU-VG	Q12DCCPU-V		
	-	"15102" or later *1		Earlier than "15102" *1
	-	Extended mode	Basic mode *2	
SW1DND-CWWLQ24-E	○	×	×	×
SW1DND-CWWLQ12-E	×	○	○	○

*1 First five digits of serial number

*2 For Q12DCCPU-V earlier than "15102", the mode cannot be changed. Q12DCCPU-V earlier than "15102" is regarded as the basic mode in this manual.

CHAPTER 1 OVERVIEW

CW Workbench is a product for customers who develop a user program that operates on the C Controller module. CW Workbench is an OEM product of Wind River Systems, Inc. The product has only basic functions required for user program development, such as coding, building, and debugging, as a subset product of Wind River Workbench 3.2.

1.1 Features

Engineering tool for C Controller, CW Workbench, is software to offer dedicated integrated development environment for the Mitsubishi C Controller module.
CW Workbench has the following features:

(1) Software to offer dedicated integrated development environment for the C Controller module

This product is an integrated development environment to execute the following operations: project management, source code editing, building, and debugging. A user program for the C Controller module can be effectively developed.

(2) The same specifications as those of Wind River Workbench 3.2

Displays and operations of CW Workbench are the same specifications as those of Wind River Workbench 3.2 for common functions.

(3) The operating system of the development environment (personal computer) is compatible with Windows® 7.

The operating system of the development environment (personal computer) is compatible with Windows® XP, Windows Vista®, and Windows® 7.

(4) Extended functions using plug-in software

The third party plug-in software can be easily added, which allows functions to be easily extended.

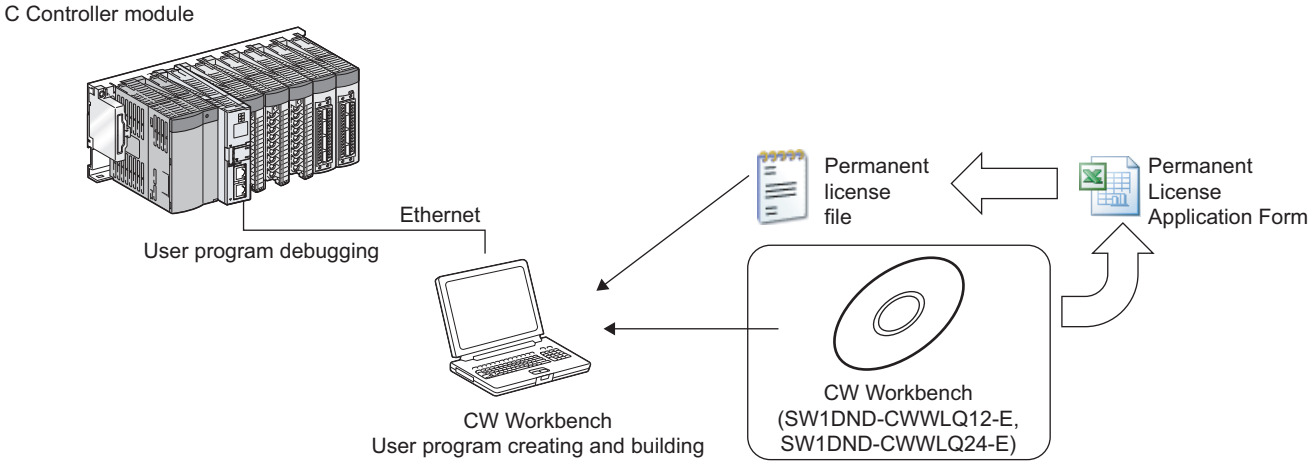
CHAPTER 2 SYSTEM CONFIGURATION

2.1 Environment Configuration for Each License Type

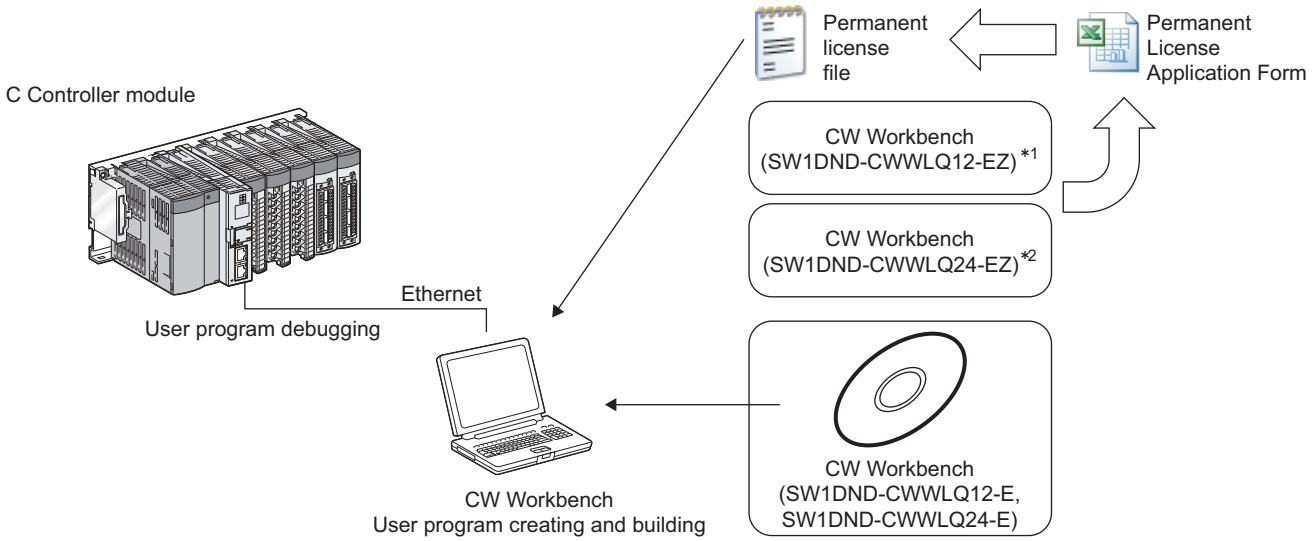
This section explains the environment for developing user programs in CW Workbench.

A permanent license is required to install CW Workbench. (☞Page 22, Section 5.1)

(1) Product with license



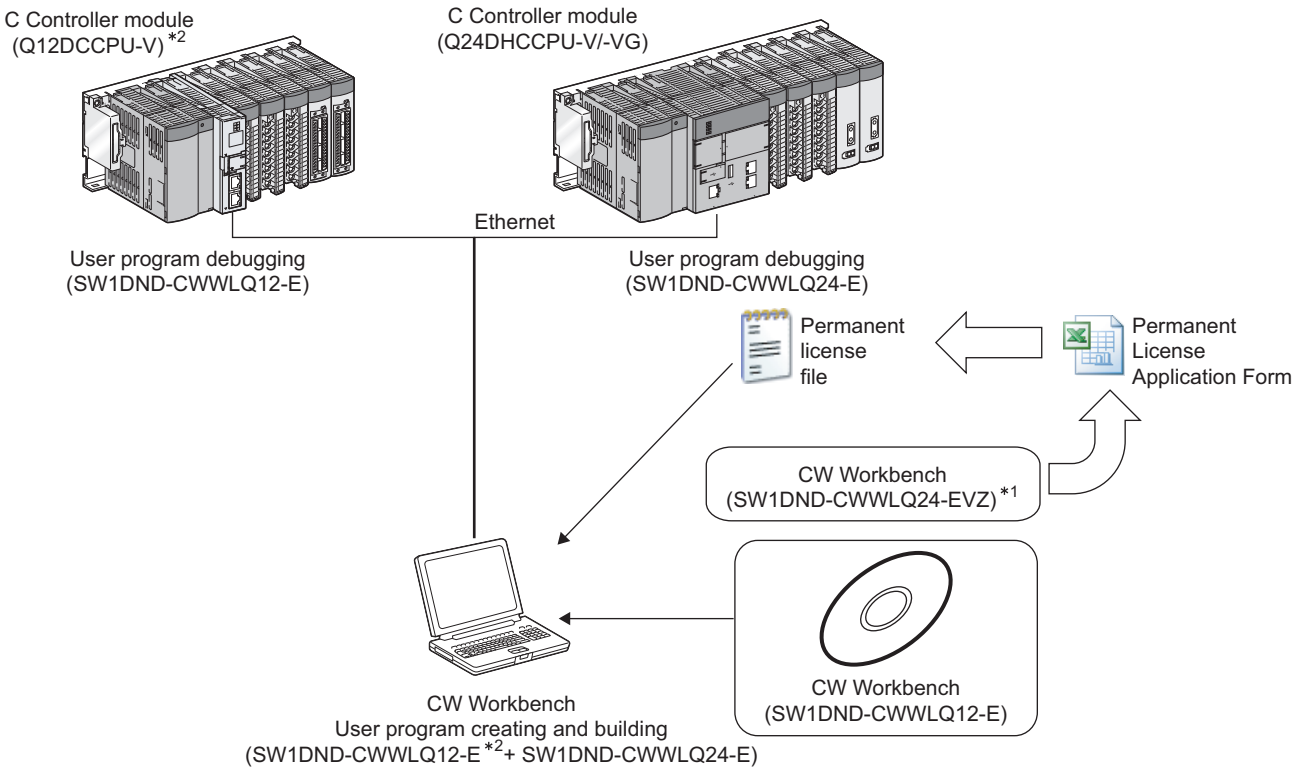
(2) Additional license product



*1 The DVD-ROM is not included with the CW Workbench additional license product (SW1DND-CWWLQ12-EZ). To install CW Workbench, the DVD-ROM included with the CW Workbench product with license (SW1DND-CWWLQ12-E) is required.

*2 The DVD-ROM is not included with the CW Workbench additional license product (SW1DND-CWWLQ24-EZ). To install CW Workbench, the DVD-ROM included with the CW Workbench product with license (SW1DND-CWWLQ24-E) is required.

(3) Updated license product



*1 The DVD-ROM is not included with the CW Workbench updated license product (SW1DND-CWWLQ24-EVZ). To install CW Workbench, the DVD-ROM included with the CW Workbench product with license (SW1DND-CWWLQ12-E) is required.

*2 The configuration before installing the updated license product (SW1DND-CWWLQ24-EVZ) is indicated.

Point

If the CPUs to be used after update are not written in "Target CPU" of Permanent License Application Form, please consult your local Mitsubishi representative.

2.2 Relevant Module

CW Workbench is compatible with the following C Controller module:

Model	Operating System	Relevant software package
Q24DHCCPU-V	VxWorks 6.8	SW1DND-CWWLQ24-E SW1DND-CWWLQ24-EZ SW1DND-CWWLQ24-EVZ
Q24DHCCPU-VG		
Q12DCCPU-V	VxWorks 6.4	SW1DND-CWWLQ12-E SW1DND-CWWLQ12-EZ SW1DND-CWWLQ12-EVZ

2.3 Operating Environment

Below is a list of the operating environment of a personal computer where CW Workbench can be operated.

Item		Description
Computer		PC/AT-compatible personal computer in which the following operating systems can be operated.
	CPU	Intel® Core™2 Duo 2GHz or higher is recommended.
	Memory requirements	1G byte or more (2G bytes or more is recommended)
Hard disk space		Install size: HDD 4G bytes or more Executable size: Virtual memory 512MB or more
Display		1024-by-768 resolution or higher
Disk drive		DVD-ROM drive
Interface		Ethernet 10BASE-T/100BASE-TX/1000BASE-T
OS *1,*2,*3,*4		• Microsoft® Windows® 7 Professional (Japanese/English)*5 • Microsoft® Windows® 7 Ultimate (Japanese/English)*5 • Microsoft® Windows® 7 Enterprise (Japanese/English)*5 • Microsoft® Windows Vista® Business (Japanese/English) Operating System • Microsoft® Windows Vista® Ultimate (Japanese/English) Operating System • Microsoft® Windows Vista® Enterprise (Japanese/English) • Microsoft® Windows® XP Professional (Japanese/English) Operating System Service Pack3 or later

*1 A 64-bit operating system is not supported.

*2 The following functions cannot be used.
Using the following functions may lead to improper operation of CW Workbench.

- Application execution in Windows® Compatibility Mode
- Fast User Switching
- Remote Desktop
- Large fonts (detailed setting in the screen properties)
- DPI setting other than 100%

*3 Log on as a user with the Administrator attribute when installing and uninstalling CW Workbench.

*4 TCP/IP is required.

*5 The following function cannot be used:

- Windows® XP Mode

2.4 Specifications

Below are specifications of CW Workbench.

Item	Specifications	
Product name	CW Workbench	
Operating system of applicable host machine	Refer to "Operating environment"(☞ Page 16, Section 2.3)	
Applicable C Controller module	Refer to "Relevant Module".(☞ Page 16, Section 2.2)	
Applicable operating system	Q24DHCCPU-V	VxWorks 6.8
	Q24DHCCPU-VG	
	Q12DCCPU-V	VxWorks 6.4
Framework	Wind River Workbench 3.2 base (Eclipse3.5)	
Project creation and management	VxWorks Downloadable Kernel Module Project	
Building	Q24DHCCPU-V	GNU compiler (GCC 4.1.2 for Intel Atom Z5xx)
	Q24DHCCPU-VG	
	Q12DCCPU-V	GNU compiler (GCC 3.4.4 for SH-4A)
Debugger	• Debugging execution restart • Debugging execution forced stop • Breakpoints • Step through execution • Variables/structure variables reference and editing • Register value reference and editing • Memory block reference and editing • Target connection agent • Dynamic Printf (Q24DHCCPU-V/-VG only)	
License format	Node locked	
Document	Wind River Workbench 3.2 Help document	

CHAPTER 3 PACKING LIST

3.1 Packing List

The following items are included with CW Workbench. Check that all the items are included before use.

(1) Items included with CW Workbench

Model name	Item	Qty.
(Product with license) SW1DND-CWWLQ12-E SW1DND-CWWLQ24-E	DVD-ROM(☞ Page 18, Section 3.1 (2))	1
	"Before Using the Product"	1
	License Certificate	1
	End-User Software License Agreement	1
	Permanent License Application Form (sample)	1
(Additional license product*1) SW1DND-CWWLQ12-EZ SW1DND-CWWLQ24-EZ (Updated license product*1) SW1DND-CWWLQ12-EVZ SW1DND-CWWLQ24-EVZ	"Before Using the Product"	1
	License Certificate	1
	End-User Software License Agreement	1
	Permanent License Application Form (sample)	1

*1 The DVD-ROM is not included with the CW Workbench additional license product or updated license product. To install CW Workbench, the DVD-ROM included with the CW Workbench product with license is required.

(2) Contents of CW Workbench DVD-ROM

Content	Description	Storage location
CW Workbench install image	An install image file of CW Workbench	\ \images
Relevant document	Relevant manuals of VxWorks and Wind River Workbench 3.2 (PDF)	\docs
	A license notice (PDF) of the third party used in CW Workbench	\3rd_party_licensor_notices
Manual	CW Workbench Operating Manual (PDF)	\manual
Permanent License Application Form	An application form for a permanent license and a license transfer. (PermanentLicenseApplicationForm.xls) Use the form when applying for a permanent license and a license transfer.	\
Install key file	A file to be used as an install key when you do not have a permanent license file and do not have the Internet. CW Workbench operates with no license when having been installed using an install key file (Install_SH_IA.txt).	\
CW Workbench open source file	A CW Workbench open source file	\src

3.2 Things to Prepare

The following lists things to prepare before using CW Workbench.

(1) Development environment (personal computer)

Prepare a personal computer to install and use CW Workbench.

Point

Enter the host name within 2 to 15 alphanumeric characters for a personal computer to be used as a development environment (personal computer).

Operating Environment for operating specifications of a personal computer.(☞Page 16, Section 2.3)

(2) CW Workbench DVD-ROM

Prepare a CW Workbench DVD-ROM included with the product with license (SW1DND-CWWLQ12-E, SW1DND-CWWLQ24-E).

The DVD-ROM is required to install CW Workbench. Apply for a permanent license using an application form stored on the DVD-ROM.

(3) License Agreement

An LAC described in the License Agreement is required to install CW Workbench by using a temporary license.

An LAC and a product ID described in the License Agreement are also required to apply for a permanent license.

Prepare the License Agreement included with CW Workbench.

(4) Permanent license file

A permanent license file is required to install CW Workbench by using a permanent license.

To acquire a permanent license file, use a Permanent License Application Form stored on the DVD-ROM and send us the Form.

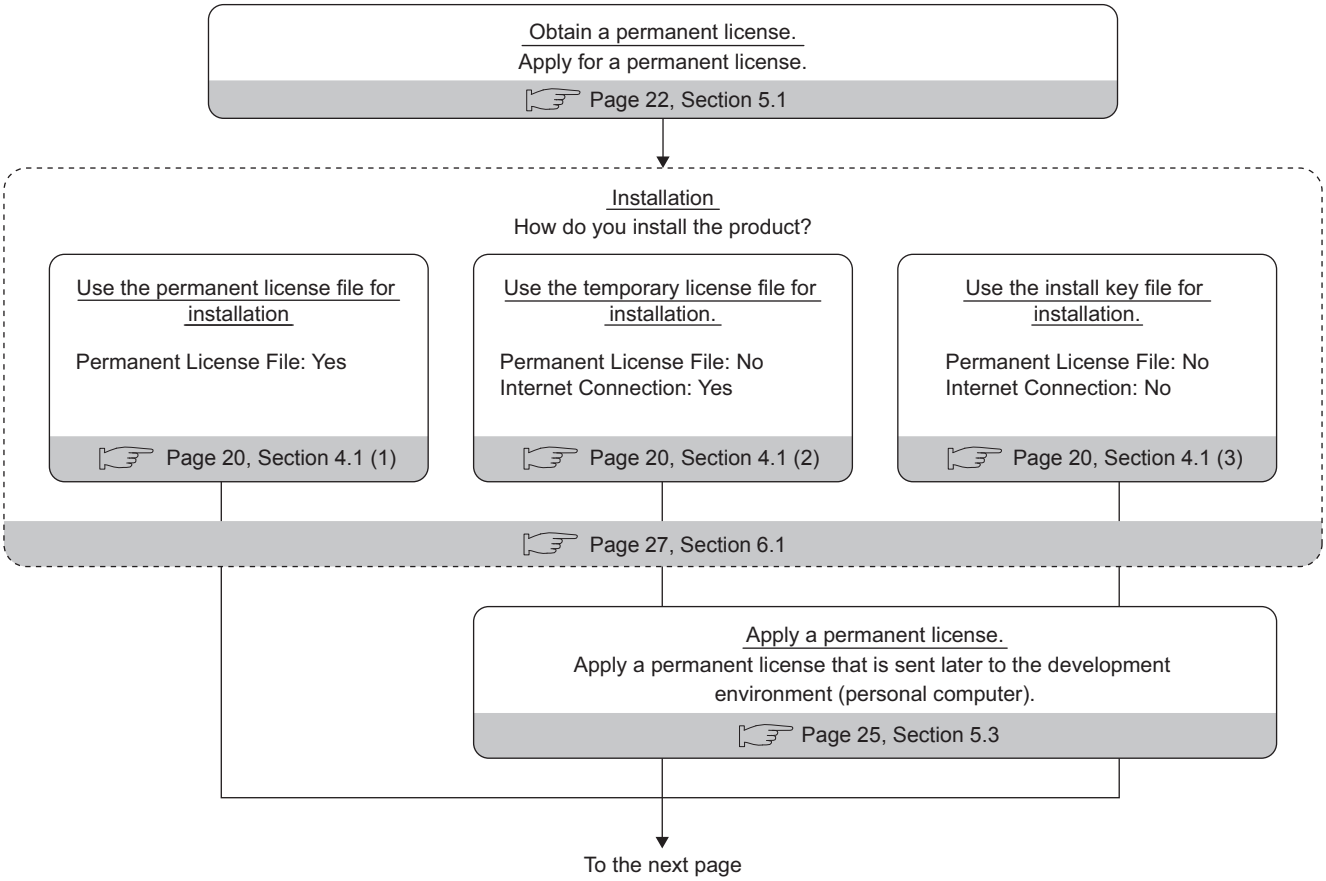
(5) Internet connection

An Internet connection is required to install CW Workbench by using a permanent license.

Acquire a 31-day temporary license via the Internet.

CHAPTER 4 PROCEDURE OVERVIEW

4.1 From Installation to Debugging


Obtain a permanent license.
Apply for a permanent license.
Page 22, Section 5.1
Installation
How do you install the product?
Use the permanent license file for installation
Permanent License File: Yes
Page 20, Section 4.1 (1)
Use the temporary license file for installation.
Permanent License File: No
Internet Connection: Yes
Page 20, Section 4.1 (2)
Use the install key file for installation.
Permanent License File: No
Internet Connection: No
Page 20, Section 4.1 (3)
Page 27, Section 6.1
Apply a permanent license.
Apply a permanent license that is sent later to the development environment (personal computer).
Page 25, Section 5.3
To the next page

(1) Installation using a permanent license

This installation is for users with a permanent license (regular license). All the functions of CW Workbench can be used for unlimited duration.

(2) Installation using a temporary license

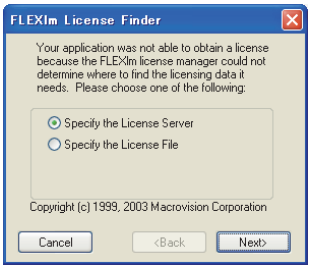
This installation is for users with a temporary license acquired on the Internet. All the functions of CW Workbench can be used for 31 days after the installation.

(3) Installation using an install key on the DVD-ROM

This installation is for users having neither permanent license nor Internet connection.
Only the editor, import, and export functions of CW Workbench can be used. The build, compile, or debug functions cannot be used.
Note that for SW1DND-CWWLQ24-EVZ, the installation using the following install key files cannot be executed.

- Install_SH4.txt of SW1DND-CWWLQ12-E
- Install_SH_IA.txt of SW1DND-CWWLQ24-E

The dialog box shown to the right appears when CW Workbench is started up with no license.
Click Cancel to continue the operation.


FLEXlm License Finder
Your application was not able to obtain a license because the FLEXlm license manager could not determine where to find the licensing data it needs. Please choose one of the following:
Specify the License Server
Specify the License File
Copyright (c) 1999, 2003 Macrovision Corporation
Cancel
<Back
Next>

From the previous page

Apply a patch.
Information and services
For further information and services, please consult your local Mitsubishi representative.
Page 52, CHAPTER 7

Create a project.
Create a user program project and perform programming.
Page 55, CHAPTER 8

Build.
Build a user program.
Page 69, Section 8.3

Connect the target.
Connect CW Workbench to the C Controller module.
Page 75, CHAPTER 9

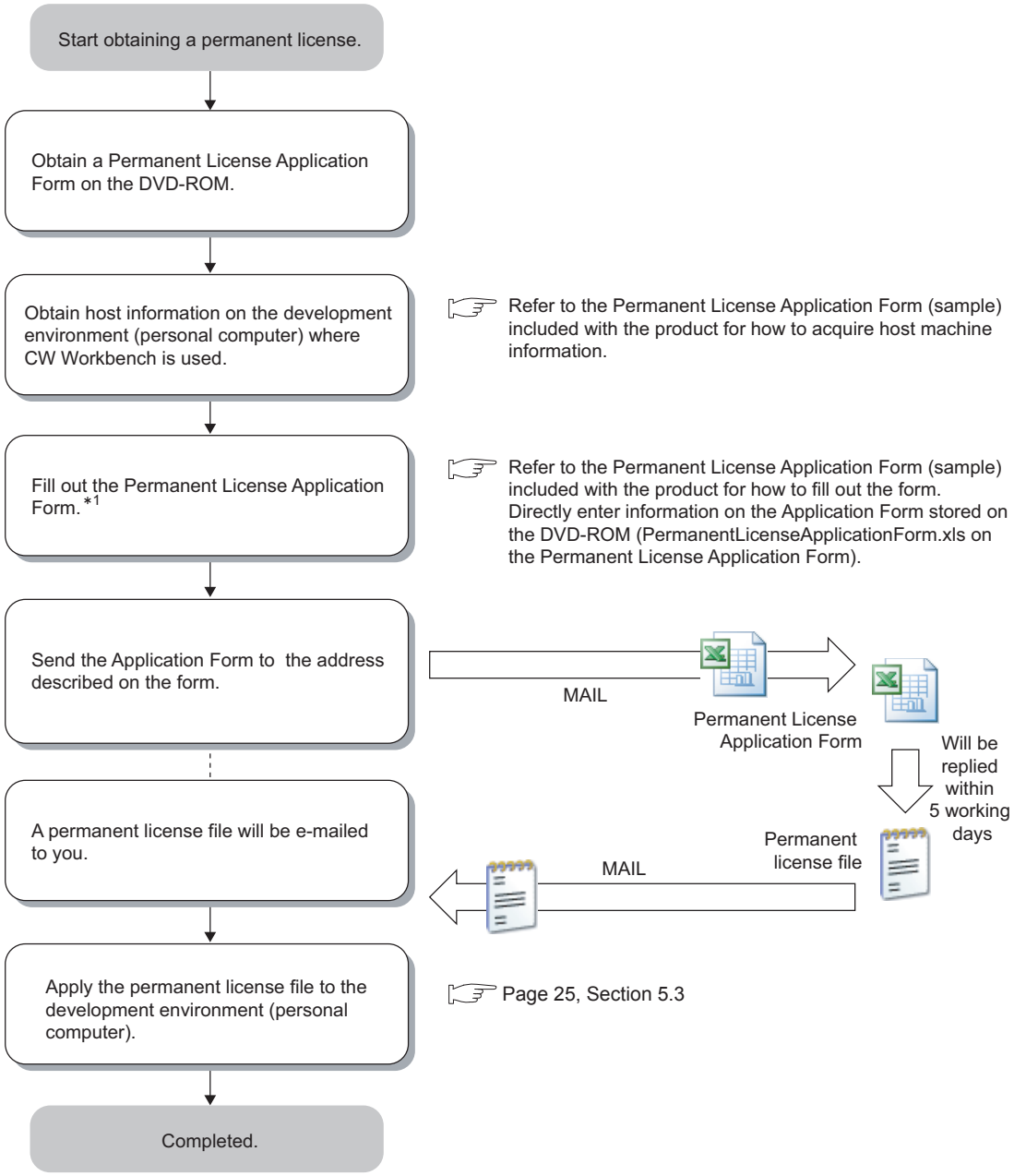
Download.
Download the user program on the C Controller module.
Page 83, CHAPTER 10

Debug.
Debug the user program.
Page 83, CHAPTER 10

CHAPTER 5 PERMANENT LICENSE

5.1 Obtaining Permanent License

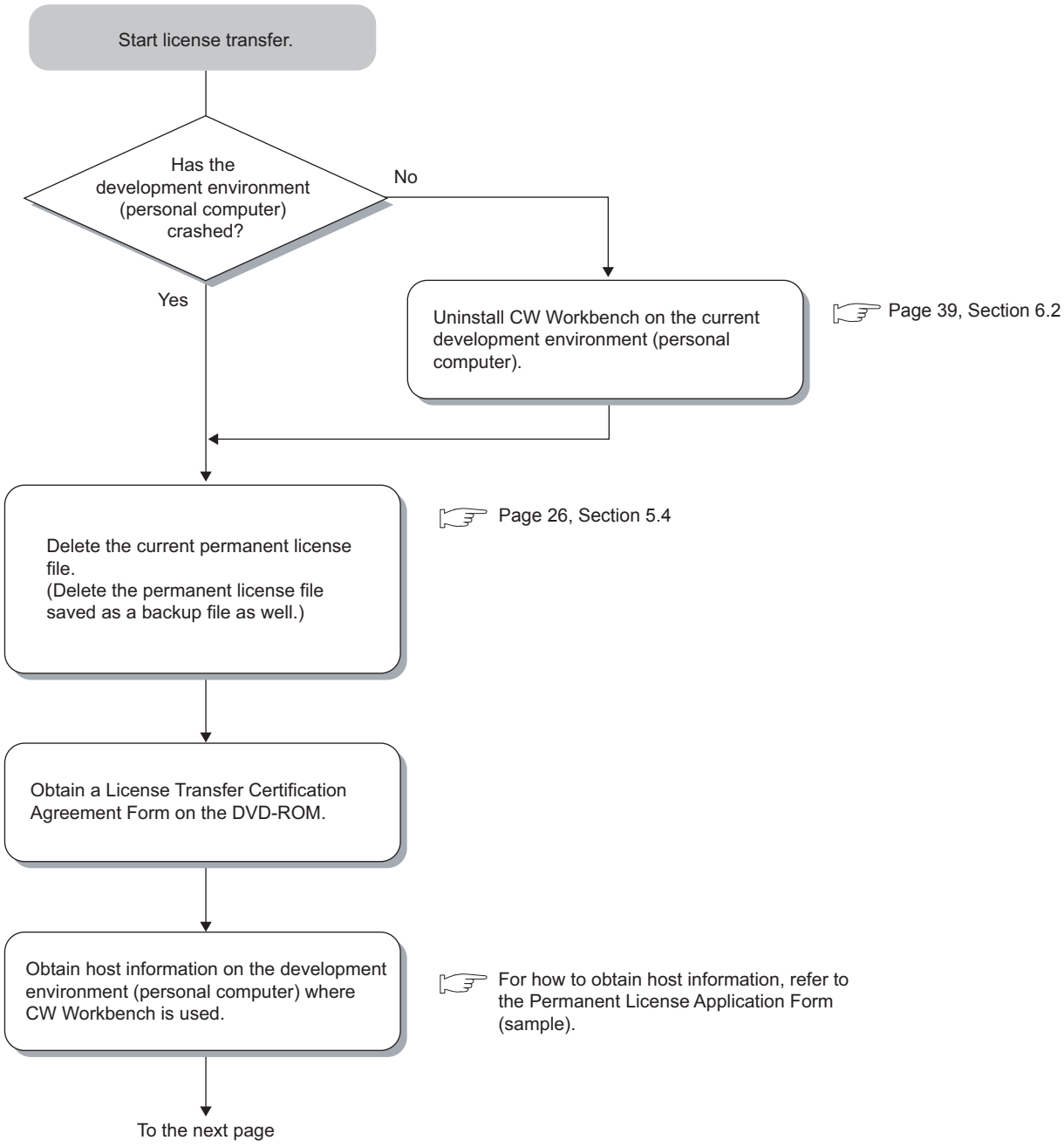
A permanent license is required to use CW Workbench for unlimited duration. Follow the instructions shown below to obtain a permanent license.

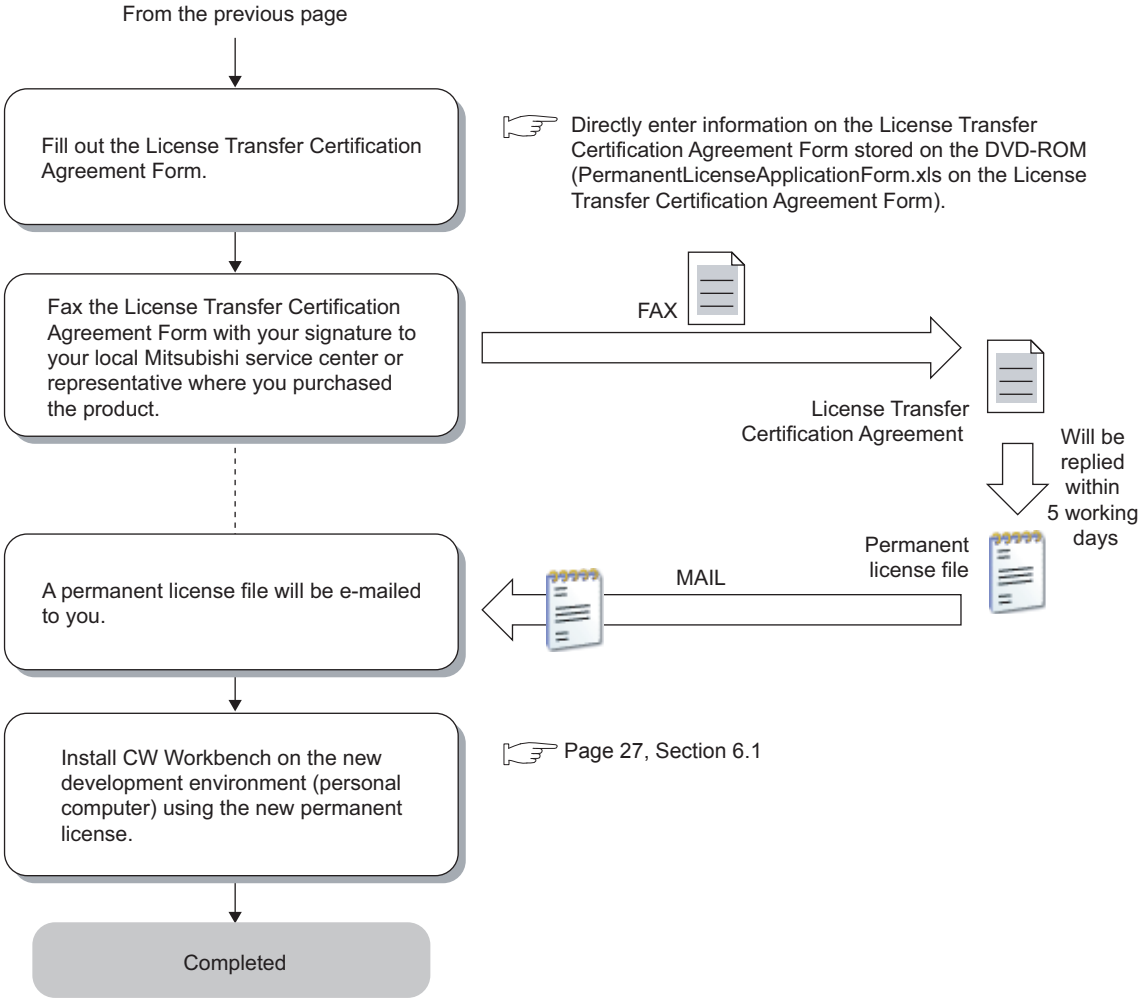

Start obtaining a permanent license.
Obtain a Permanent License Application Form on the DVD-ROM.
Obtain host information on the development environment (personal computer) where CW Workbench is used.
Refer to the Permanent License Application Form (sample) included with the product for how to acquire host machine information.
Fill out the Permanent License Application Form. *1
Refer to the Permanent License Application Form (sample) included with the product for how to fill out the form. Directly enter information on the Application Form stored on the DVD-ROM (PermanentLicenseApplicationForm.xls on the Permanent License Application Form).
Send the Application Form to the address described on the form.
MAIL
Permanent License Application Form
Will be replied within 5 working days
A permanent license file will be e-mailed to you.
Permanent license file
MAIL
Apply the permanent license file to the development environment (personal computer).
Page 25, Section 5.3
Completed.

*1 For the development environment (personal computer) information on the Permanent License Application Form for the updated license product, enter the same information as the one registered to acquire the permanent license previously.

5.2 License Transfer

Another permanent license is required on a new development environment (personal computer) for license transfer due to reasons such as when the development environment (personal computer) where CW Workbench has been installed crashed.
Follow the instructions shown below for license transfer.


Start license transfer.
Has the development environment (personal computer) crashed?
No
Yes
Uninstall CW Workbench on the current development environment (personal computer).
Page 39, Section 6.2
Delete the current permanent license file.
(Delete the permanent license file saved as a backup file as well.)
Page 26, Section 5.4
Obtain a License Transfer Certification Agreement Form on the DVD-ROM.
Obtain host information on the development environment (personal computer) where CW Workbench is used.
For how to obtain host information, refer to the Permanent License Application Form (sample).
To the next page


From the previous page
Fill out the License Transfer Certification Agreement Form.
Directly enter information on the License Transfer Certification Agreement Form stored on the DVD-ROM (PermanentLicenseApplicationForm.xls on the License Transfer Certification Agreement Form).
Fax the License Transfer Certification Agreement Form with your signature to your local Mitsubishi service center or representative where you purchased the product.
FAX
License Transfer Certification Agreement
Will be replied within 5 working days
A permanent license file will be e-mailed to you.
Permanent license file
MAIL
Install CW Workbench on the new development environment (personal computer) using the new permanent license.
Page 27, Section 6.1
Completed

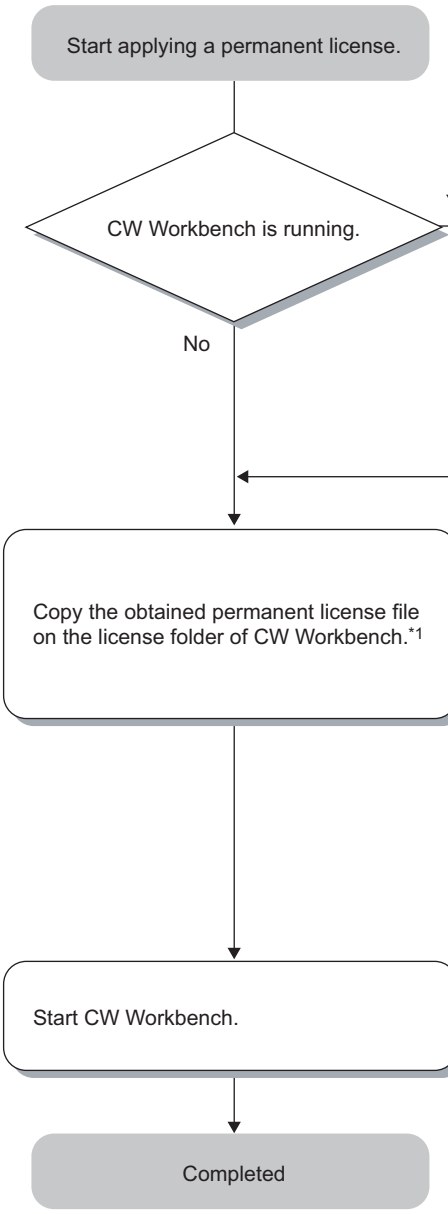
Remark

If you have lost the License Agreement and do no know the Product ID, contact your local Mitsubishi service center or representative and give them information filled out on the Permanent License Application Form.

- Name of the representative person, department name, and company name
- E-mail address
- Target CPU

5.3 Applying Permanent License

Apply the acquired permanent license file to the development environment (personal computer) specified for "Host machineinformation" on the application form.
Follow the instructions shown below to apply the permanent license file.



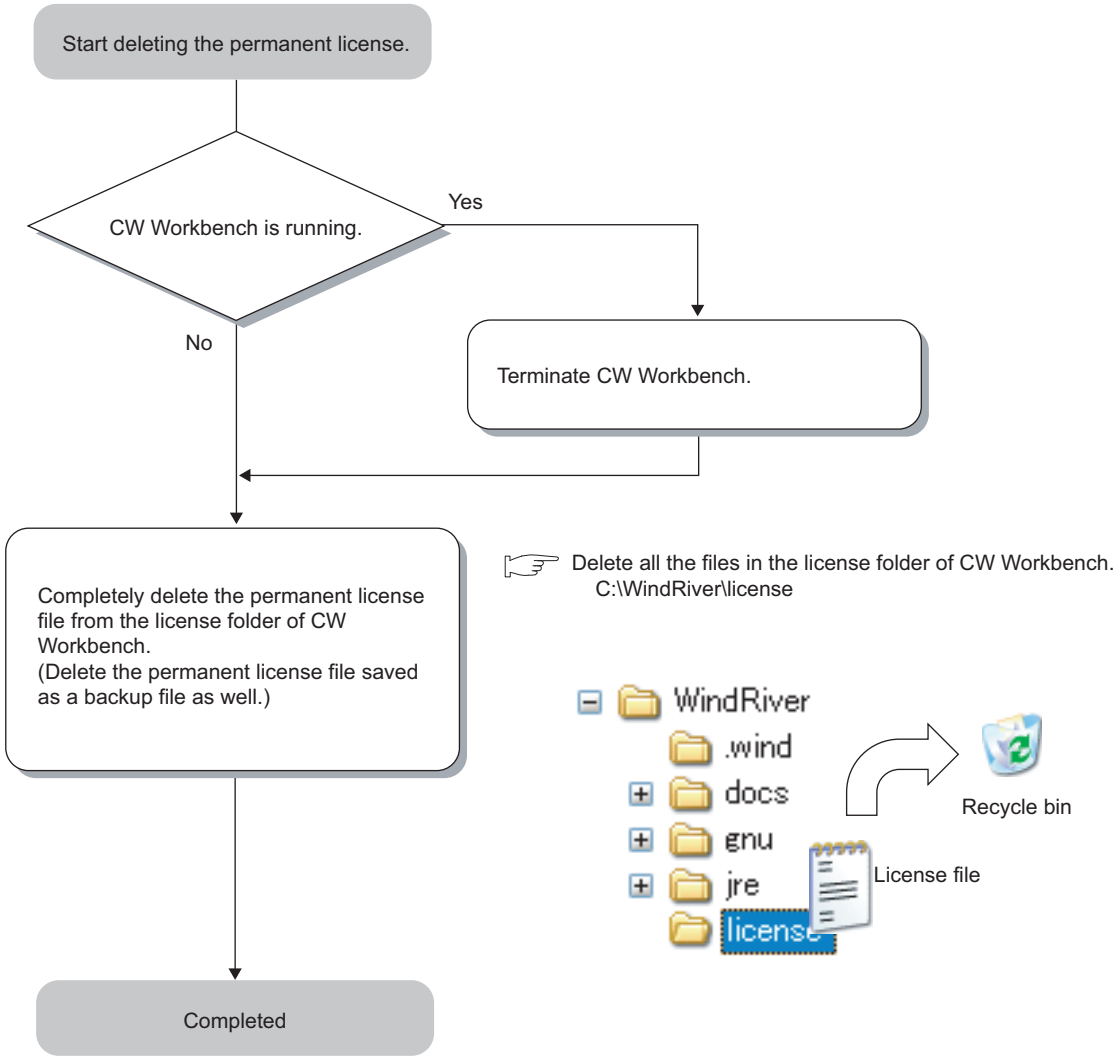
Below is a license folder when CW Workbench is installed on the C drive without changing the folder of the installation location.
C:\WindRiver\license

Note: Do not store the license file in folders other than the one specified above and use the file when applying the license file to the development environment (personal computer).

*1 When two or more permanent license files are obtained with the updated license product, overwrite all files.

5.4 Deleting Permanent License

Follow the instructions shown below to delete the current permanent license for license transfer.



CHAPTER 6 INSTALLATION AND UNINSTALLATION

6.1 Installation

This section explains how to install the product, how to operate, and precautions.

Unless operations differ depending on the operating system, windows and dialog boxes of Windows® XP are used for explanations.

6.1.1 Preparation before installation

(1) Log on as a user with the Administrator attribute when installing the product on the development environment (personal computer).

(2) Insert the DVD-ROM into the development environment (personal computer), the installer automatically starts.

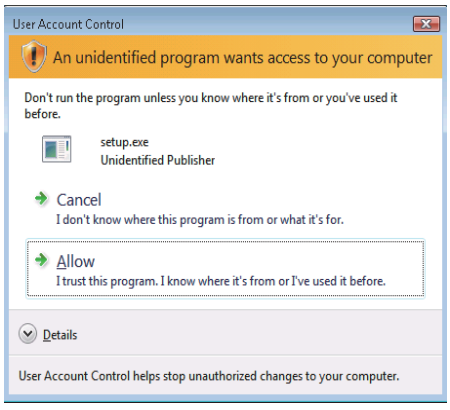
If the installer does not automatically start, double-click "setup.exe" on the DVD-ROM to start it.

Do not execute more than one "setup.exe" at the same time, or the product may not be properly installed. If the installation was not completed properly, uninstall the product and execute "setup.exe" again.

(3) For installation on Windows Vista® or Windows® 7, a dialog box asking whether to enable or disable User Account Control appears.

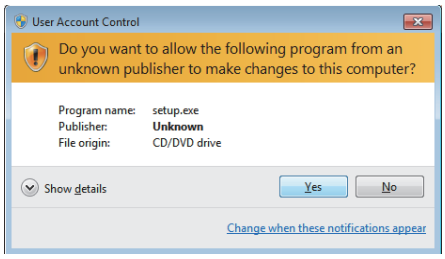
Click "Allow" or "Yes" to continue the installation.

- For Windows Vista®


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
setup.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Click "Allow".

• For Windows® 7


User Account Control
Do you want to allow the following program from an unknown publisher to make changes to this computer?
Program name: setup.exe
Publisher: Unknown
File origin: CD/DVD drive
Show details
Yes
No
Change when these notifications appear

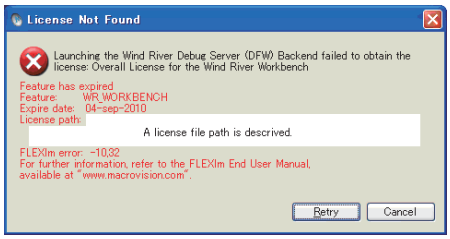
Click the Yes button.

(4) Acquire a permanent license file.

If you require the Permanent License Application Form, or if you have purchased the updated license product, please consult your local Mitsubishi representative.

Point

- Stop all other applications running on Windows® before installation.
- The installer may not operate the functions properly due to the automatic start of update programs of the operating system or any other software, such as Windows® Update or Java Update. Change the setting to disable the automatic start of update programs before installation.
- CW Workbench cannot be over-installed on the development environment (personal computer) where CW Workbench has been already installed. Uninstall the product before reinstallation.
- Do not install the product on the development environment (personal computer) where Wind River Workbench has been already installed. To install the product, uninstall Wind River Workbench or prepare another development environment (personal computer).
- When the product is installed by using a temporary license, the product operates for 31 days. A regular license is issued after a permanent license is obtained. Use the permanent license to start the product.

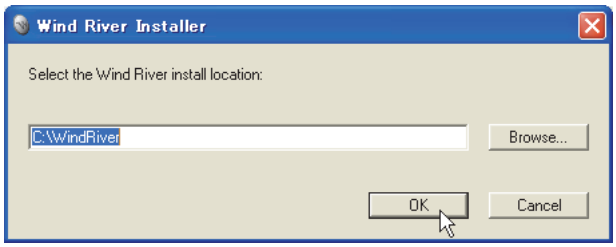

License Not Found
Launching the Wind River Debug Server (DFW) Backend failed to obtain the license: Overall License for the Wind River Workbench
Feature has expired
Feature: WR_WORKBENCH
Expire date: 04-sep-2010
License path:
A license file path is descrived.
FLEXlm error: -10,32
For further information, refer to the FLEXlm End User Manual, available at "www.macrovision.com".
Retry
Cancel

The license error message shown below appears after 31 days. The product continues to operate by clicking the Cancel button, but the project creation, compiling/building, and debug functions cannot be used.
[License error message]
Error text: "Feature has expired"
Error code: -10

- To install CW Workbench using a temporary license, it can be obtained via the Internet. Before installation, check that the personal computer can be connected to the Internet.
  If the personal computer is connected to the Internet via a proxy server, check the IP address and port number in advance. They are required to be set during installation.
- Note the following when installing the updated license product.
  - Enter the LAC (License Authorization Code) written on the License Agreement of updated license product to LAC on the User Information window.
  - The updated license product (SW1DND-CWWLQ24-EVZ) cannot be installed with the install key file (Install_SH4.txt) of the product with license (SW1DND-CWWLQ12-E).

6.1.2 How to install CW Workbench

Start installing CW Workbench



Insert the CW Workbench DVD-ROM into the DVD drive to start the installer.

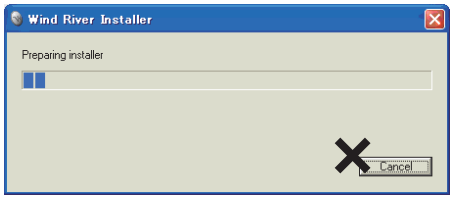
1. After the installer is started, execute one of the following operations and click the OK button:

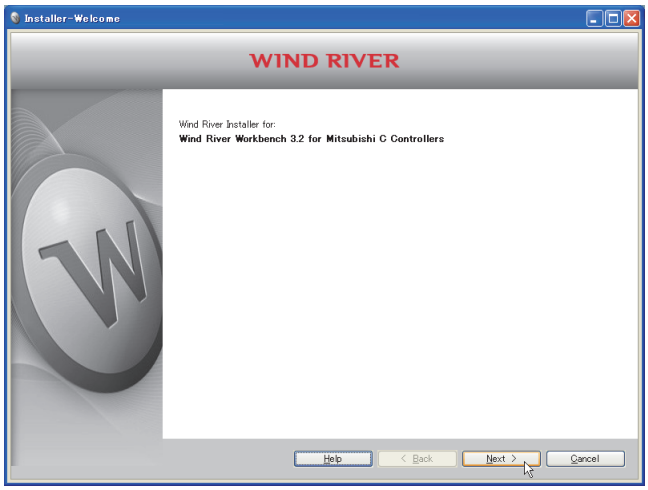
- Enter a folder name of the installation location.
- Click the Browse... button to select a folder of the installation location from the tree view.

Point

- The following characters can be used for a folder name of the installation location: (Space cannot be used.)
  - Alphanumeric characters
  - Hyphen "-"
  - Underscore "_"

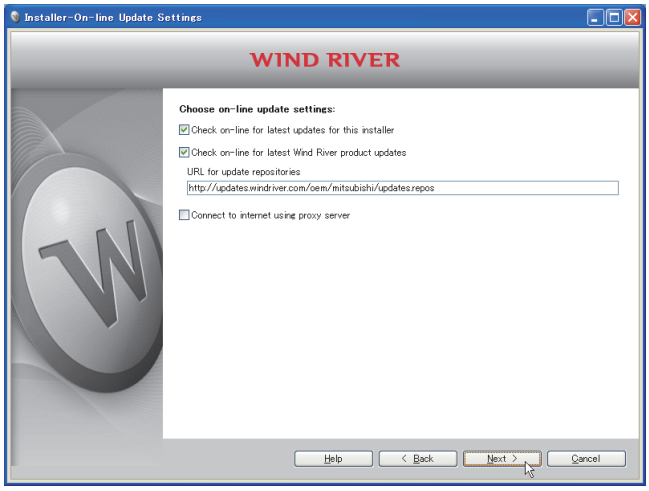
  The product cannot be properly installed if characters other than those described above are used for a folder name.
- The dialog box shown below may appear after the OK button is clicked. Clicking the Cancel button does not cancel the operation.





2. Click the Next > button.

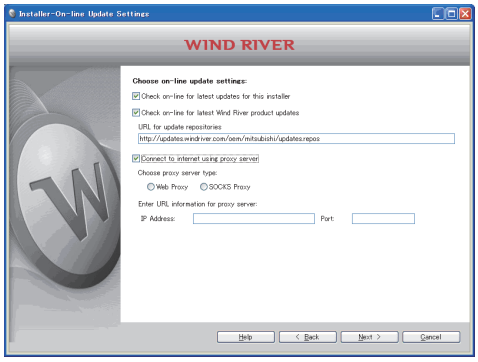
To the next page



3. **Click the Next > button.**

Point

If the personal computer is connected to the Internet via a proxy server, check the box of "Connect to internet using proxy server" and configure the proxy server setting set for the Internet connection on the personal computer.



Installer-License Agreement
WIND RIVER
By selecting "I ACCEPT the terms of this license agreement" and clicking Next, you consent to the terms of this agreement. If you do not wish to be bound by the terms of this agreement, click Cancel and do not install this software.
THE SOFTWARE AND ACCOMPANYING DOCUMENTATION ARE WIND RIVER PROPERTY AND PROTECTED BY UNITED STATES COPYRIGHT LAW AND INTERNATIONAL TREATY. UNAUTHORIZED USE, REPRODUCTION OR DISTRIBUTION IS SUBJECT TO CIVIL AND CRIMINAL PENALTIES.
BY CLICKING ON THE "I ACCEPT" BUTTON YOU ACKNOWLEDGE THAT YOU HAVE ENTERED INTO AN AGREEMENT WITH MITSUBISHI ELECTRIC CORPORATION RELATED TO YOUR USE OF THIS PRODUCT.
04April2010
I ACCEPT the terms of this license agreement.
I DO NOT ACCEPT the terms of this license agreement.
Help
< Back
Next >
Cancel

4. **Select "I ACCEPT the terms of this license agreement." and click the Next > button.**

To the next page

5. **To continue the installation, select one of the following procedures:**

If the permanent license file is not obtained

- Installation using a temporary license (a personal computer can be connected to the Internet):

  ⇨ (1)(2)(3) ☞ Page 32

- Installation using an install key on the DVD-ROM (a personal computer cannot be connected to the Internet):

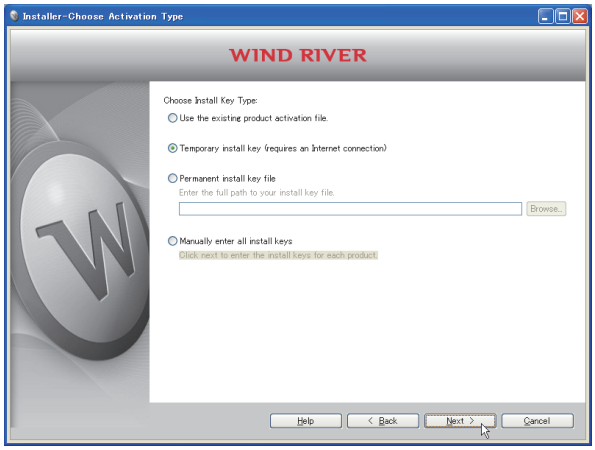
  ⇨ (4) ☞ Page 34

If the permanent license file is obtained

- Installation using a permanent license

  ⇨ (5) ☞ Page 35

Installation using a temporary license

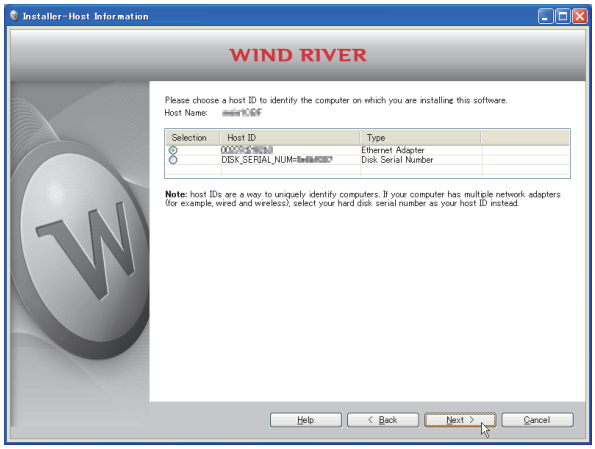

Installer-Choose Activation Type
WIND RIVER
Choose Install Key Type:
Use the existing product activation file.
Temporary install key (requires an Internet connection)
Permanent install key file
Enter the full path to your install key file.
Browse...
Manually enter all install keys
Click next to enter the install keys for each product.
Help
< Back
Next >
Cancel

(1) Select "Temporary install key (requires an Internet connection)" and click the Next > button.

Point

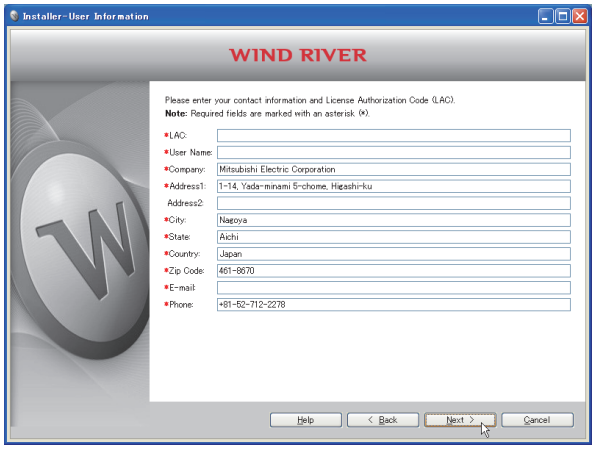
- If "Temporary install key" is selected, the Internet is required to acquire "Temporary install key". Execute the installation on a personal computer connected to the Internet.
- If the personal computer is connected to the Internet via a proxy server, configure the proxy server setting. (☞ Page 30 Point)
  If "Temporary install key" is selected without configuring the proxy server setting, installation does not proceed.

⇩


Installer-Host Information
WIND RIVER
Please choose a host ID to identify the computer on which you are installing this software.
Host Name:
Selection
Host ID
Type
Ethernet Adapter
DISK_SERIAL_NUM=
Disk Serial Number
Note: host IDs are a way to uniquely identify computers. If your computer has multiple network adapters (for example, wired and wireless), select your hard disk serial number as your host ID instead.
Help
< Back
Next >
Cancel

(2) Check the content of "Note" on the window. Select either "Ethernet Adapter" or "Disk Serial Number" for the Host ID and click the Next > button.

⇩



(3) Enter a License Authorization Code (LAC) and user information listed below and click the Next > button.

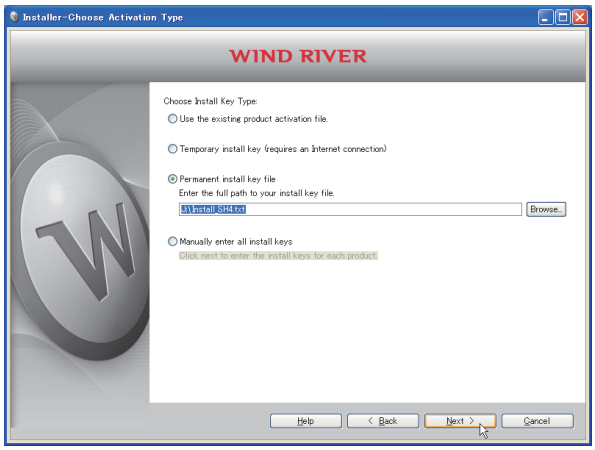
Point

Use alphanumeric characters for the LAC and user information.
(Items with a * mark on the window must be entered correctly.)

LAC:	License Authorization Code (described in the License Agreement included with CW Workbench)
User Name:	User name
Company:	Company name
Address1:	Address (such as town name and block number)
Address2:	Building name, etc. (can be left blank)
City:	City
State:	State
Country:	Country
Zip Code:	Zip code
E-mail:	E-mail address
Phone:	Phone number

Go to the step 6 (☞ Page 36)

Installation using an install key on the DVD-ROM


Installer-Choose Activation Type
WIND RIVER
Choose Install Key Type:
Use the existing product activation file.
Temporary install key (requires an Internet connection)
Permanent install key file
Enter the full path to your install key file.
Browse...
Manually enter all install keys
Click next to enter the install keys for each product.
Help
< Back
Next >
Cancel

(4) Select "Permanent install key file", click the Browse... button, specify the following install key file stored on the DVD-ROM, and click the Next > button.

➪ For Q24DHCCPU-V/-VG: "Install_SH_IA.txt"

➪ For Q12DCCPU-V: "Install_SH4.txt"

Point

When the installation is executed with specifying the install key file, CW Workbench is installed without license and only the following functions can be used:

- Editor function (such as creation, editing, saving, and searching)
- Import/Export

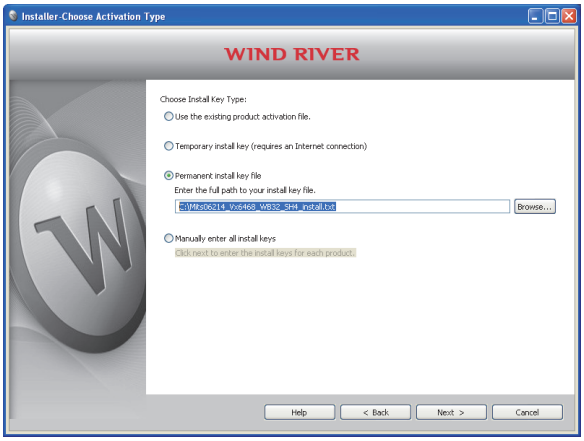
To use all the functions of CW Workbench, obtain and apply a permanent license.

☞ Page 22, Section 5.1
☞ Page 25, Section 5.3

⇩

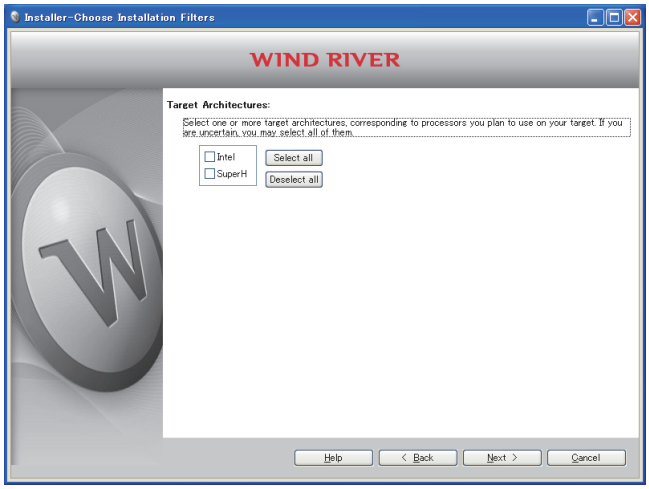
Go to the step 6 (☞ Page 36)

Installation using a permanent license


Installer-Choose Activation Type
WIND RIVER
Choose Install Key Type:
Use the existing product activation file.
Temporary install key (requires an Internet connection)
Permanent install key file
Enter the full path to your install key file.
Browse...
Manually enter all install keys
Click next to enter the install keys for each product.
Help
< Back
Next >
Cancel

(5) Select "Permanent install key file" and click the Browse... button.
Select the permanent license of the product to be installed from the tree view. Then click the Next > button.

Go to the step 6 (☞ Page 36)

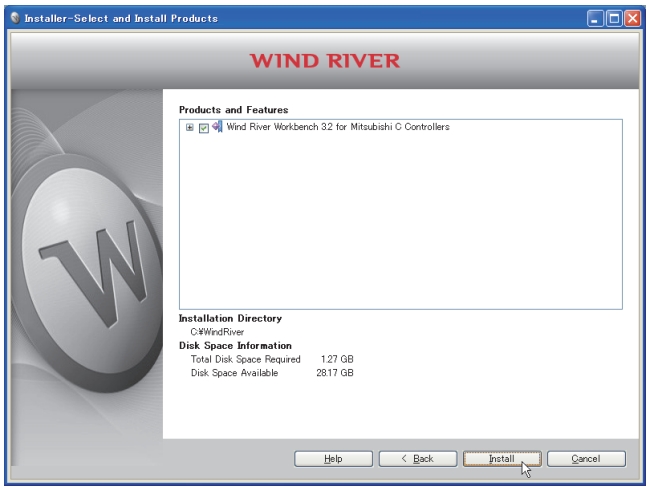

Installer-Choose Installation Filters
WIND RIVER
Target Architectures:
Select one or more target architectures, corresponding to processors you plan to use on your target. If you are uncertain, you may select all of them.
Intel
SuperH
Select all
Deselect all
Help
< Back
Next >
Cancel

6. **Click the** Deselect all **button.**

Select the following items, and click the Next > **button.**

➪ For Q24DHCCPU-V/-VG: "Intel"

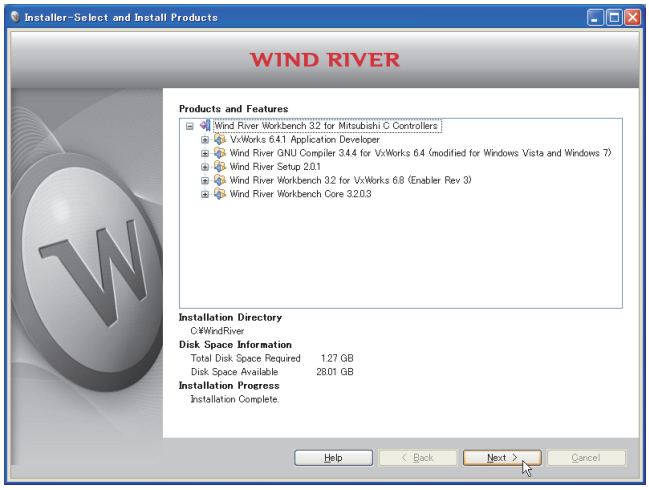
➪ For Q12DCCPU-V: "SuperH"



7. **Check that "Wind River Workbench 3.2 for Mitsubishi C Controllers" has been selected.**

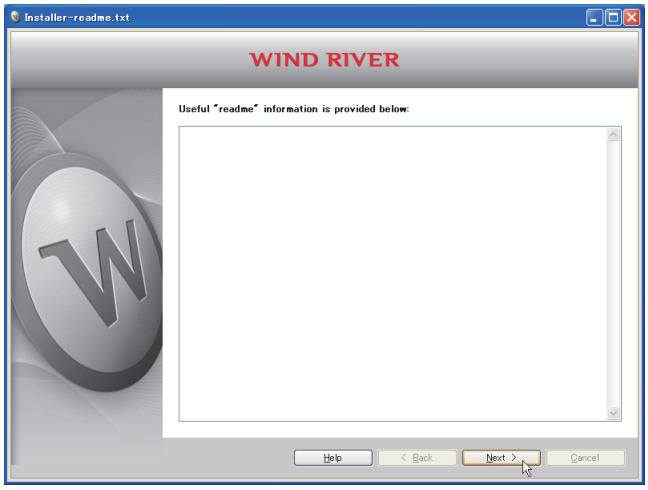
Click the Install **button.**

If the check box is ☐ or ☐, keep clicking the box until it changes to ☑.

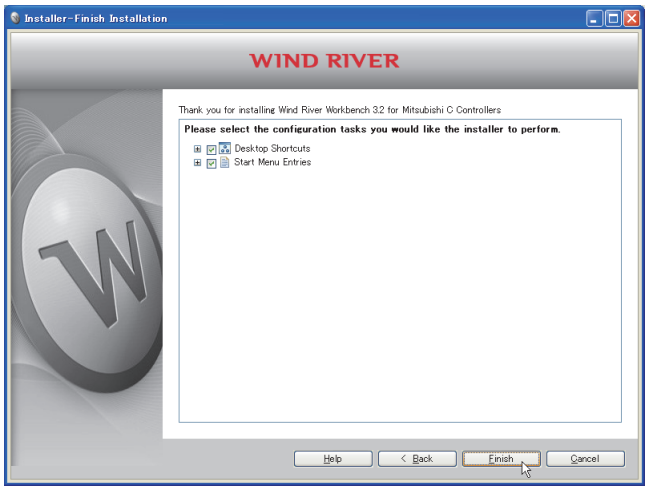

Installer-Select and Install Products
WIND RIVER
Products and Features
Wind River Workbench 3.2 for Mitsubishi C Controllers
VxWorks 6.4.1 Application Developer
Wind River GNU Compiler 3.4.4 for VxWorks 6.4 (modified for Windows Vista and Windows 7)
Wind River Setup 2.0.1
Wind River Workbench 3.2 for VxWorks 6.8 (Enabler Rev 3)
Wind River Workbench Core 3.2.0.3
Installation Directory
C:¥WindRiver
Disk Space Information
Total Disk Space Required 1.27 GB
Disk Space Available 28.01 GB
Installation Progress
Installation Complete.
Help
< Back
Next >
Cancel

8. **Click the** Next > **button.**

To the next page



9. Click the Next > button.



10. Click the Finish button.

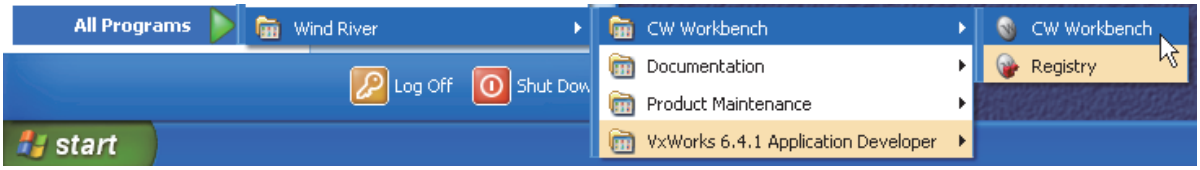
Completed

6.1.3 After installation

This section explains an icon registration, sample programs, and a patch application after the product is installed.

(1) How to start CW Workbench

After the product is installed, [Wind River] is added to [All Programs] in [Start]. "CW Workbench", "Documentation", "Product Maintenance", and "VxWorks 6.4.1 Application Developer"/"VxWorks 6.8.1 Application Developer" menus can be selected.
Start the product from "CW Workbench" in the "CW Workbench" menu.



Below is a list of descriptions of each menu described above.

(a) Menus to be registered

Menu		Description
[CW Workbench]	CW Workbench	Starts CW Workbench.
	Registry	Starts Wind River Registry for Workbench 3.2. When CW Workbench is started, Wind River Registry for Workbench 3.2 also starts, except when it is running already. An icon is registered on the task tray.
[Documentation]	Workbench 3.2	Wind River Workbench 3.2 document
	VxWorks 6.8	VxWorks 6.8 document
[Product Maintenance]	Installation at X YYYY	Uninstalls and updates CW Workbench and applies a patch. (X: drive name, Y: folder name of the installation location)
[VxWorks 6.8.1 Application Developer][*1] or [VxWorks 6.4.1 Application Developer][*2]	FTP Server	Starts WFTPD.
	VxWorks COMx	Starts HyperTerminal for Telnet connection. VxWorks COMx cannot be used on the operating system, such as Windows Vista® and Windows®7, where HyperTerminal is not installed.
	VxWorks Development Shell	Starts a command line Shell in which the Gnu compiler can be used.

*1: For SW1DND-CWWLQ24-E
*2: For SW1DND-CWWLQ12-E

(b) Sample programs to be registered

Sample programs provided by Wind River Systems, Inc. are installed when the product is installed on the development environment (personal computer). To check the sample programs to be installed, start the product and select from the file menu [New] ⇨ [Example...].
For details on the sample programs, refer to the Wind River Workbench document provided by Wind River Systems, Inc.

[Help]in the menu bar⇨[Help Contents]⇨"Wind River Documentation" → "Guides" → "Host Tools" → "Wind River Workbench By Example(VxWorks 6 Version), 3.2"

If the SW4PVC-CCPU or SW3PVC-CCPU has been already installed on the development environment (personal computer), the sample programs for the C Controller module can be imported to the product and used.

6.2 Uninstallation

This section explains how to uninstall CW Workbench and precautions.

Unless operations differ depending on the operating system, windows and dialog boxes of Windows® XP are used for explanations.

6.2.1 Preparation before uninstallation

(1) Log on as a user with the Administrator attribute when uninstalling the product on the development environment (personal computer).

(2) Terminate the product before uninstallation.

(3) Uninstall the product in [Product Maintenance].

The product cannot be uninstalled from "Add or Remove Programs" in the Control Panel.

[Product Maintenance] can be executed as follows: [Start] ⇨ [All Programs] ⇨ [Wind River] ⇨ [Product Maintenance] ⇨ [Installation at X YYYY]

Remark

X and YYYY of [Installation at X YYYY] mean as below:

X: The drive to which the product has been installed

YYYY: The folder to which the product has been installed

If the folder of the installation location selected upon installation is C:\WindRiver, the menu name is [Installation at C WindRiver].

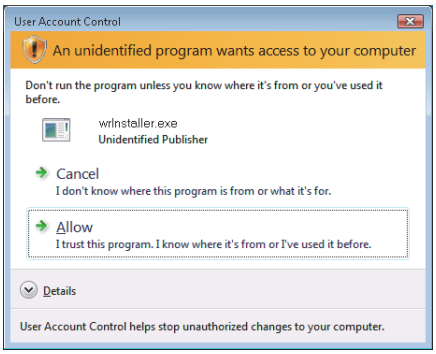
(4) Do not stop the processing during uninstallation. If the processing has been stopped, uninstall the product again.

If the uninstallation processing has failed after the uninstallation processing has been stopped, reinstall the product. Then uninstall the product again.

(5) For uninstallation on Windows Vista® or Windows® 7, a dialog box asking whether to enable or disable User Account Control appears.

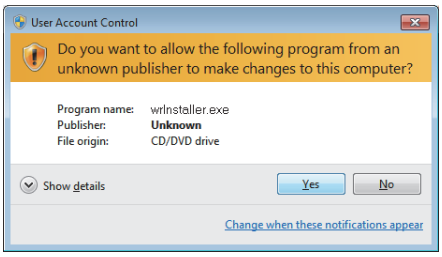
Click "Allow" or "Yes" to continue the uninstallation.

- For Windows Vista®


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
wrInstaller.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Click "Allow".

- For Windows® 7


User Account Control
Do you want to allow the following program from an unknown publisher to make changes to this computer?
Program name: wrInstaller.exe
Publisher: Unknown
File origin: CD/DVD drive
Show details
Yes
No
Change when these notifications appear

Click the Yes button.

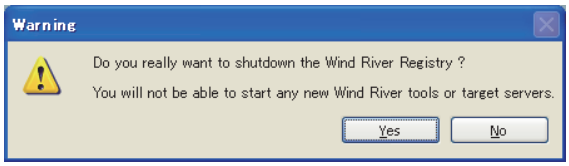
6.2.2 How to uninstall CW Workbench

Start uninstalling CW Workbench

⇩

1. If the "Wind River Registry for Workbench 3.2" icon ( ) exists on the task tray of Windows©, select "Shutdown" in the menu that pops up by right-clicking the icon.

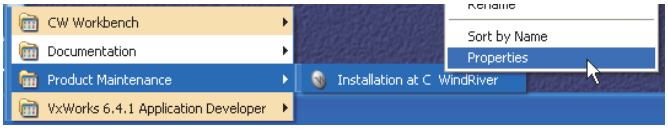
Click Yes after the following dialog box appears to terminate "Wind River Registry for Workbench 3.2".


Warning
Do you really want to shutdown the Wind River Registry ?
You will not be able to start any new Wind River tools or target servers.
Yes
No

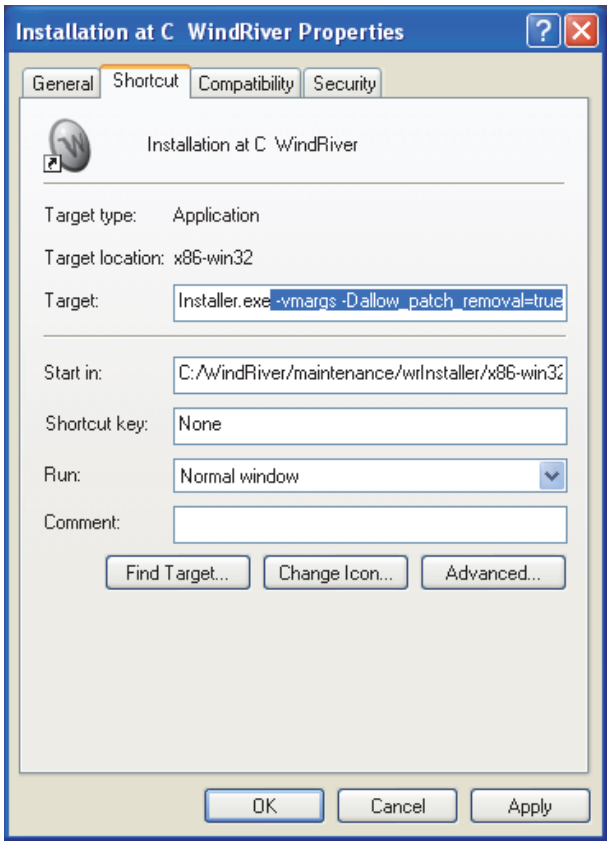
⇩

2. Select one of the following procedures:

- When a patch has been applied
  ⇨ (1)(2)(3)(4) ☞ Page 42
- When a patch has not been applied
  ⇨ (3)(4) ☞ Page 43



(1) Select [Start] ⇨ [All Programs] ⇨ [Wind River] ⇨ [Product Maintenance] ⇨ [Installation at X YYYY]. In the menu that pops up by right-clicking, select "Properties".



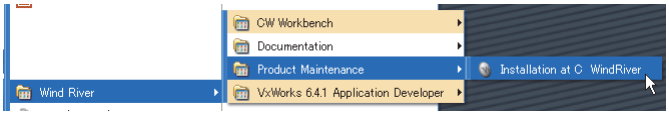
(2) At the end of the "Target" field on the <<Shortcut>> tab, add the following argument, then click the OK button.

[Argument] -vmargs -Dallow_patch_removal=true

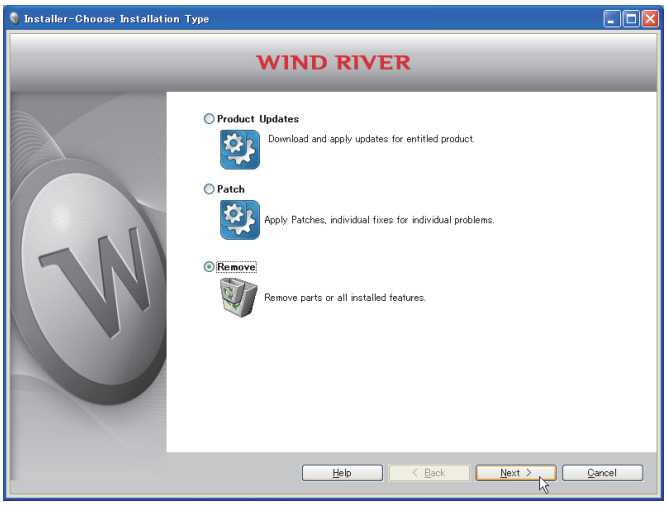
Point

When a patch has been applied and uninstallation is executed without the argument, the [Wind River] ⇨ [Product Maintenance] ⇨ [Installation at X YYYY] menu is not uninstalled and remains.
Uninstalling CW Workbench following the steps described earlier can delete the remaining menu.

To the next page

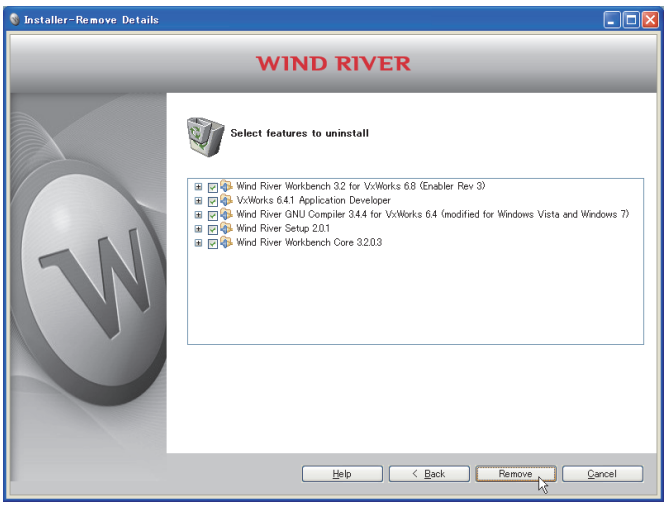


(3) Select [Start] ⇨ [All Programs] ⇨ [Wind River] ⇨ [Product Maintenance] ⇨ [Installation at X YYYY].



(4) Select "Remove" and click the Next > button.

Go to the step 3 (☞ Page 44)

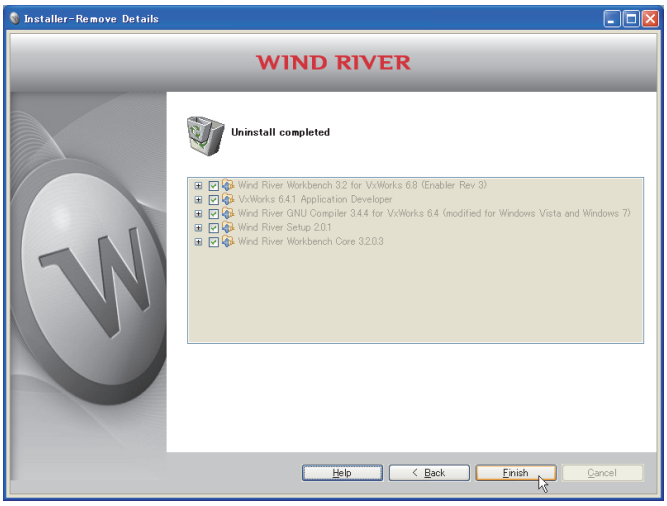

Installer-Remove Details
WIND RIVER
Select features to uninstall
Wind River Workbench 3.2 for VxWorks 6.8 (Enabler Rev 3)
VxWorks 6.4.1 Application Developer
Wind River GNU Compiler 3.4.4 for VxWorks 6.4 (modified for Windows Vista and Windows 7)
Wind River Setup 2.0.1
Wind River Workbench Core 3.2.0.3
Help
Back
Remove
Cancel

3. **Check that items to be uninstalled have been selected.**

Click the Remove **button to start the uninstallation.**

Point

If the argument to uninstall the patch has been added in the step 2 (2), select all the items, not only the patch, for uninstallation.
Note that uninstalling only the patch may lead to improper operation.


Installer-Remove Details
WIND RIVER
Uninstall completed
Wind River Workbench 3.2 for VxWorks 6.8 (Enabler Rev 3)
VxWorks 6.4.1 Application Developer
Wind River GNU Compiler 3.4.4 for VxWorks 6.4 (modified for Windows Vista and Windows 7)
Wind River Setup 2.0.1
Wind River Workbench Core 3.2.0.3
Help
Back
Finish
Cancel

4. **Click the** Finish **button.**

Completed

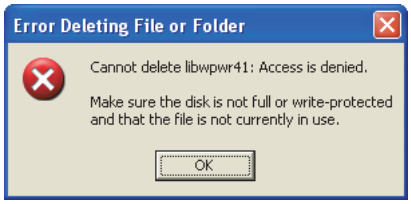
6.2.3 After uninstallation

Some folders and files are left in the folder of the installation location after the product is uninstalled. The remaining files and files are left to speed up the start-up of the installer when the product is installed again. There is no problem even if the remaining folders and files are directly deleted from Explorer if they are not necessary.

- Data not to be deleted
  Some files including Workspace folders and image files in <Folder of the installation location>.

Remark

After uninstallation, a deletion error dialog box shown below may appear when a folder of the installation location is deleted. Click the OK button. Restart the development environment (personal computer) and delete the folder of the installation location again.


Error Deleting File or Folder
Cannot delete libwpwr41: Access is denied.
Make sure the disk is not full or write-protected and that the file is not currently in use.
OK

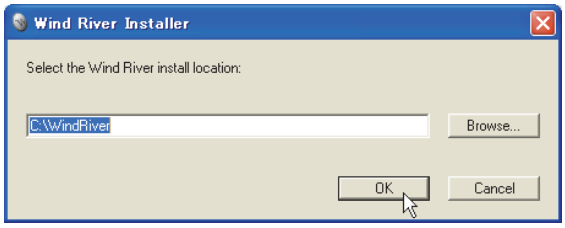
6.3 Update

This section explains how to install the updated license product (SW1DND-CWWLQ24-EVZ), how to operate, and precautions.

Unless operations differ depending on the operating system, windows and dialog boxes of Windows® XP are used for explanations.

6.3.1 How to update CW Workbench

Start installing CW Workbench



Insert the CW Workbench (SW1DND-CWWLQ12-E) DVD-ROM into the DVD drive to start the installer.

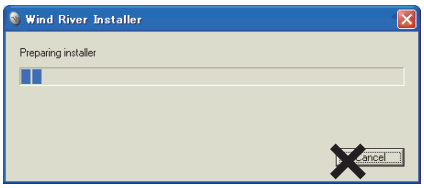
1. After the installer is started, execute one of the following operations, and click the OK button:

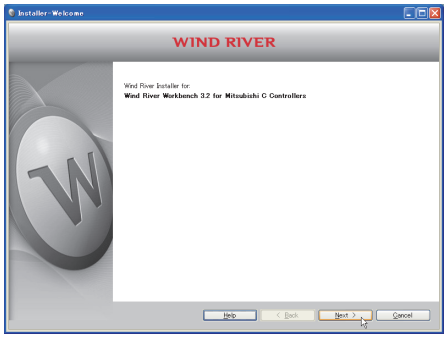
- Enter a folder name of the installation location.
- Click the Browse... button to select a folder of the installation location from the tree view.

Point

- The following characters can be used for a folder name of the installation location:
  - Alphanumeric characters (space cannot be used.)
  - Hyphen "-"
  - Underscore "_"

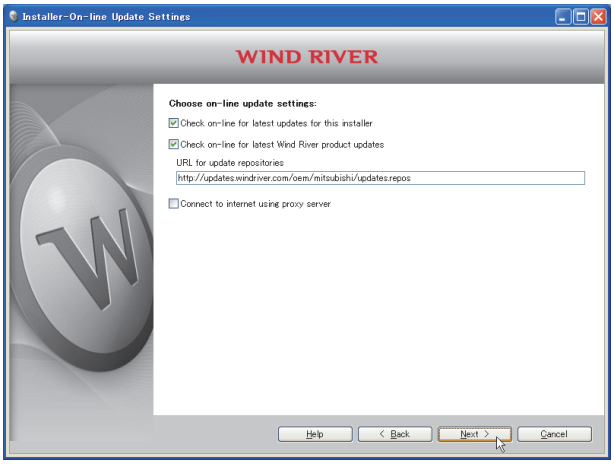
  The product cannot be properly installed if characters other than those described above are used for a folder name.
- The dialog box shown below may appear after the OK button is clicked, however, clicking the Cancel button does not cancel the operation.





2. Click the Next > button.

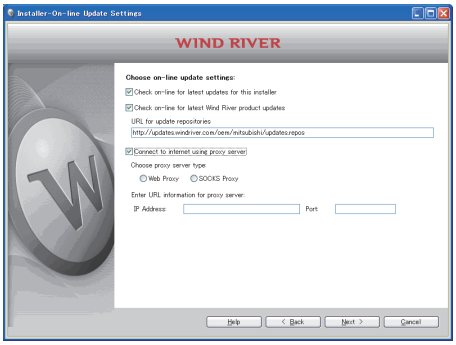
To the next page

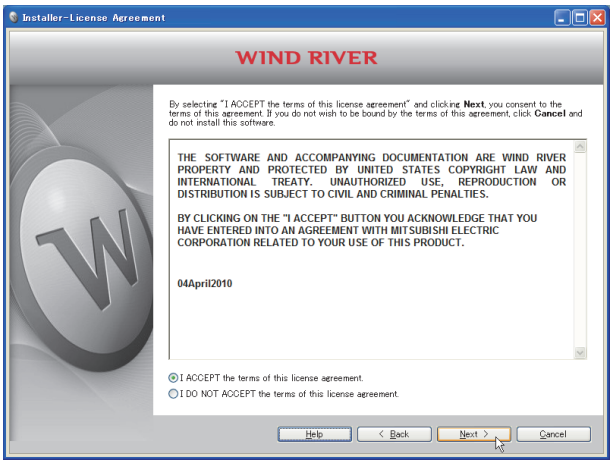


3. Click the Next > button.

Point

If the personal computer is connected to the Internet via a proxy server, check the box of "Connect to internet using proxy server" and configure the proxy server setting set for the Internet connection on the personal computer.




Installer-License Agreement
WIND RIVER
By selecting "I ACCEPT the terms of this license agreement" and clicking Next, you consent to the terms of this agreement. If you do not wish to be bound by the terms of this agreement, click Cancel and do not install this software.
THE SOFTWARE AND ACCOMPANYING DOCUMENTATION ARE WIND RIVER PROPERTY AND PROTECTED BY UNITED STATES COPYRIGHT LAW AND INTERNATIONAL TREATY. UNAUTHORIZED USE, REPRODUCTION OR DISTRIBUTION IS SUBJECT TO CIVIL AND CRIMINAL PENALTIES.
BY CLICKING ON THE "I ACCEPT" BUTTON YOU ACKNOWLEDGE THAT YOU HAVE ENTERED INTO AN AGREEMENT WITH MITSUBISHI ELECTRIC CORPORATION RELATED TO YOUR USE OF THIS PRODUCT.
04April2010
I ACCEPT the terms of this license agreement.
I DO NOT ACCEPT the terms of this license agreement.
Help
< Back
Next >
Cancel

4. Select "I ACCEPT the terms of this license agreement." and click the Next > button.

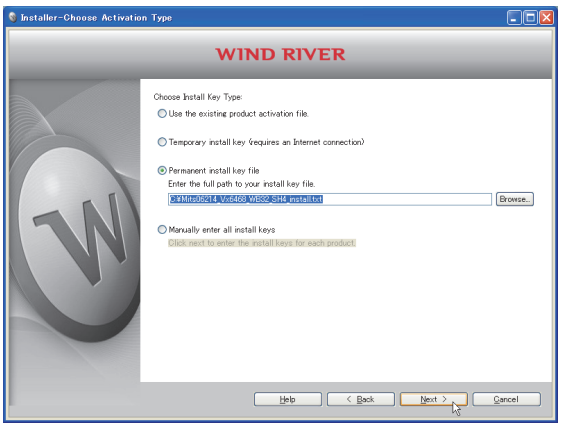
To the next page

5. To continue the installation, select one of the following procedures:

If the permanent license file is not obtained

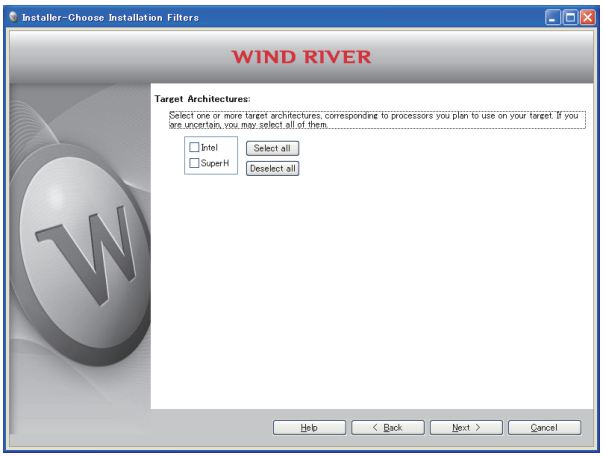
- Installation using a temporary license (a personal computer can be connected to the Internet)
  It is the same installation procedure as the one for temporary license using product with license.
  (☞ Page 32)
  Enter the LAC (License Authorization Code) written on the License Agreement of updated license product to LAC on the User Information window.
- Installation using an install key on the DVD-ROM (a personal computer cannot be connected to the Internet)
  Note that the installation using the following install key files cannot be executed.
  - Install_SH_IA.txt of SW1DND-CWWLQ24-E
  - Install_SH4.txt of SW1DND-CWWLQ12-E

If the permanent license file is obtained


Installer-Choose Activation Type
WIND RIVER
Choose Install Key Type:
Use the existing product activation file.
Temporary install key (requires an Internet connection)
Permanent install key file
Enter the full path to your install key file.
Browse...
Manually enter all install keys
Click next to enter the install keys for each product.
Help
< Back
Next >
Cancel

Select "Permanent install key file" and click the Browse... button.
Select the permanent license file from the tree view. Then click the Next > button.

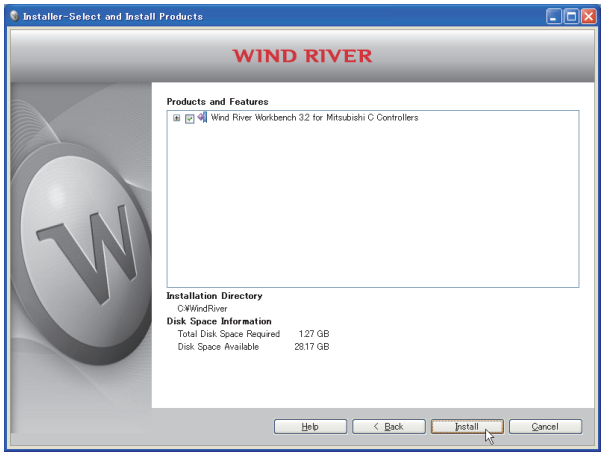
Go to the step 6 (☞ Page 49)


Installer-Choose Installation Filters
WIND RIVER
Target Architectures:
Select one or more target architectures, corresponding to processors you plan to use on your target. If you are uncertain, you may select all of them.
Intel
SuperH
Select all
Deselect all
Help
< Back
Next >
Cancel

6. **Select the following items, and click the Next > button.**

➪ For Q24DHCCPU-V/-VG: "Intel"

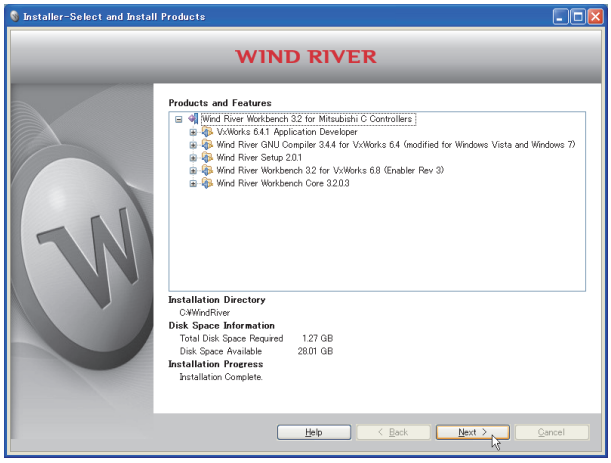
➪ For Q12DCCPU-V: "SuperH"



7. **Check that "Wind River Workbench 3.2 for Mitsubishi C Controllers" has been selected.**

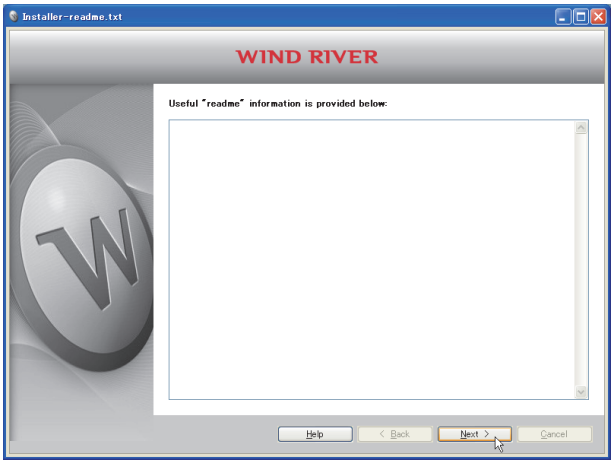
Click the Install button.

If the check box is ■ or □, keep clicking the box until it changes to ☑.

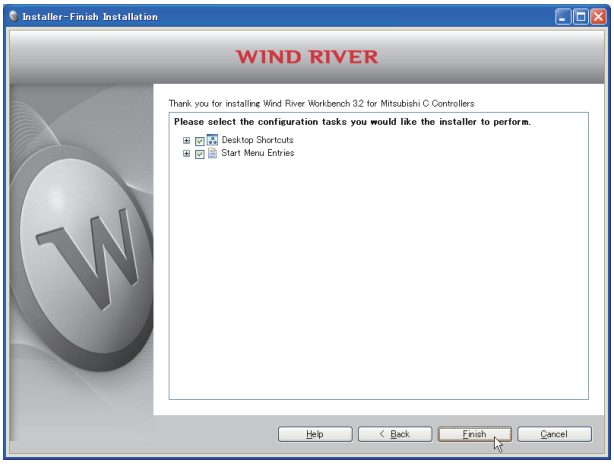

Installer-Select and Install Products
WIND RIVER
Products and Features
Wind River Workbench 3.2 for Mitsubishi C Controllers
VxWorks 6.4.1 Application Developer
Wind River GNU Compiler 3.4.4 for VxWorks 6.4 (modified for Windows Vista and Windows 7)
Wind River Setup 2.0.1
Wind River Workbench 3.2 for VxWorks 6.8 (Enabler Rev 3)
Wind River Workbench Core 3.2.0.3
Installation Directory
C:¥WindRiver
Disk Space Information
Total Disk Space Required 1.27 GB
Disk Space Available 28.01 GB
Installation Progress
Installation Complete.
Help
< Back
Next >
Cancel

8. **Click the Next > button.**

To the next page



9. Click the Next > button.



10. Click the Finish button.

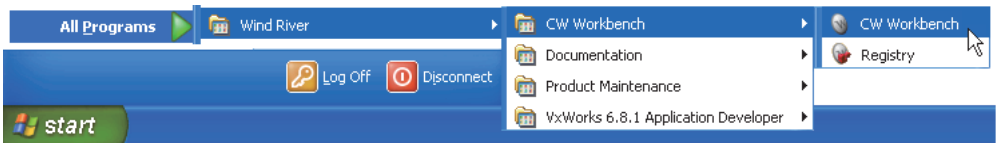
Completed

6.3.2 After update

This section explains an icon registration, sample programs, and a patch application after the product is installed with the updated license product (SW1DND-CWWLQ24-EVZ).

(1) How to start CW Workbench

After the product is installed, [Wind River] is added to [All Programs] in [Start]. "CW Workbench", "Documentation" "Product Maintenance", and "VxWorks 6.8.1 Application Developer" menus can be selected.
Start the product from "CW Workbench" in the "CW Workbench" menu.



Below is a list of descriptions of each menu described above.

(a) Menus to be registered

Menu		Description
[Product Maintenance]	Installation at X YYYY	Uninstalls and updates CW Workbench and applies a patch. (X: drive name, Y: folder name of the installation location)
[CW Workbench]	CW Workbench	Starts CW Workbench.
	Registry	Starts Wind River Registry for Workbench 3.2. When CW Workbench is started, Wind River Registry for Workbench 3.2 also starts, except when it is running already. An icon is registered on the task tray.
[Documentation]	Workbench 3.2	Wind River Workbench 3.2 document
	VxWorks 6.8	VxWorks 6.8 document
[VxWorks 6.8.1 Application Developer]	FTP Server	Starts WFTPD.
	VxWorks COMx	Starts HyperTerminal for Telnet connection. VxWorks COMx cannot be used on the operating system, such as Windows Vista® and Windows®7, where HyperTerminal is not installed.
	VxWorks Development Shell	Starts a command line Shell in which the Gnu compiler can be used.

CHAPTER 7 APPLYING PATCH

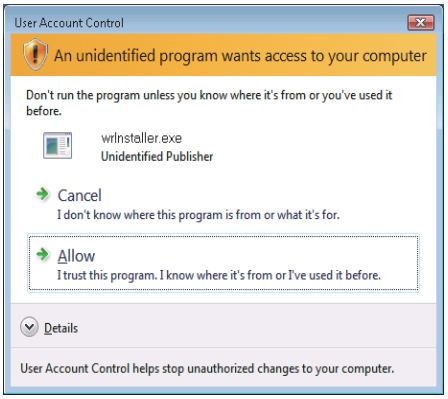
This section explains how to apply a patch in case it is released in the future.

Unless operations differ depending on the operating system, windows and dialog boxes of Windows® XP are used for explanations.

Point

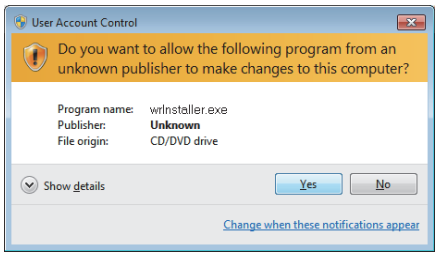
- Log on as a user with the Administrator attribute when applying a patch to the product on the development environment (personal computer).
- Terminate the product before applying a patch.
- Apply a patch in [Product Maintenance].
  [Product Maintenance] can be executed as following: [Start] ⇨ [All Programs] ⇨ [Wind River] ⇨ [Product Maintenance] ⇨ [Installation at X YYYY]
  - X and YYYY of [Installation at X YYYY] mean:
    X: The drive to which the product has been installed
    YYYY: The folder to which the product has been installed

  If the folder of the installation location specified at the time of installation is C:\WindRiver, the menu name is [Installation at C WindRiver].
- Do not stop the processing during patch application.
  Apply the patch again if the processing has been stopped.
- When a patch is applied on Windows Vista® or Windows® 7, a dialog box appears to enable or disable User Account Control. Click "Allow" or "Yes" to continue the application of the patch.
  - For Windows Vista®


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
wrInstaller.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Click "Allow".

  - For Windows® 7


User Account Control
Do you want to allow the following program from an unknown publisher to make changes to this computer?
Program name: wrInstaller.exe
Publisher: Unknown
File origin: CD/DVD drive
Show details
Yes
No
Change when these notifications appear

Click the Yes button.

7.1 How to Obtain Patch

(1) Download a patch file from the site described below.

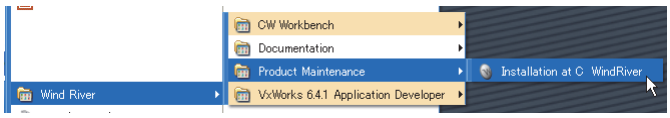
☞ Information and services

For further information and services, please consult your local Mitsubishi representative.

(2) Extract the downloaded file and store it in the updates folder in the folder of the installation location of CW Workbench.

Ex. When the installation location of CW Workbench is C:\WindRiver, the storage location of the patch is C:\WindRiver\updates.

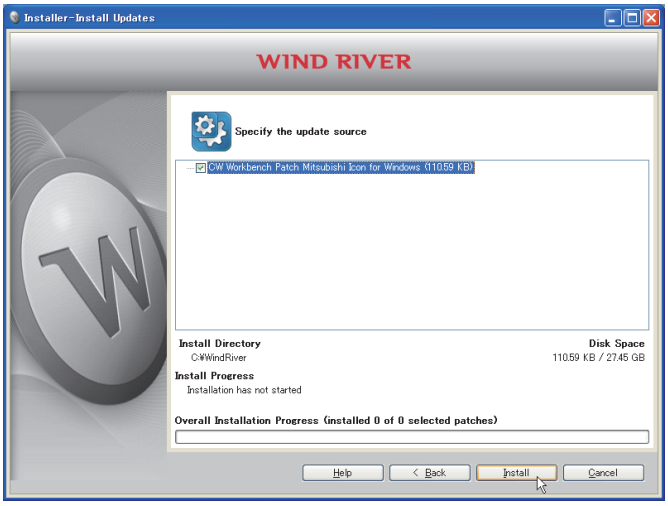
7.2 How to Apply Patch



1. **Select [Start] ⇨ [All Programs] ⇨ [Wind River] ⇨ [Product Maintenance] ⇨ [Installation at X YYYY].**

2. **Select "Patch" and click the** Next > **button.**

To the next page



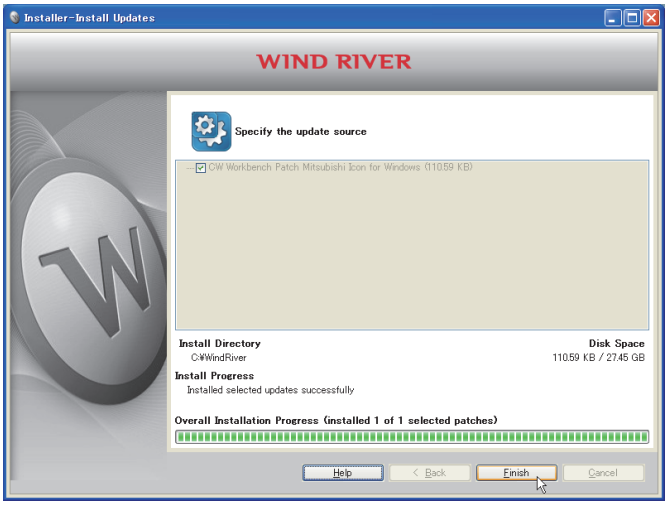
3. **Check that the patch to be installed has been selected.**

Click the Install **button.**

Point

If the patch to be installed is not displayed, check whether the storage location of the patch file is correct.

- Patch file storage location
  <Install folder>\updates

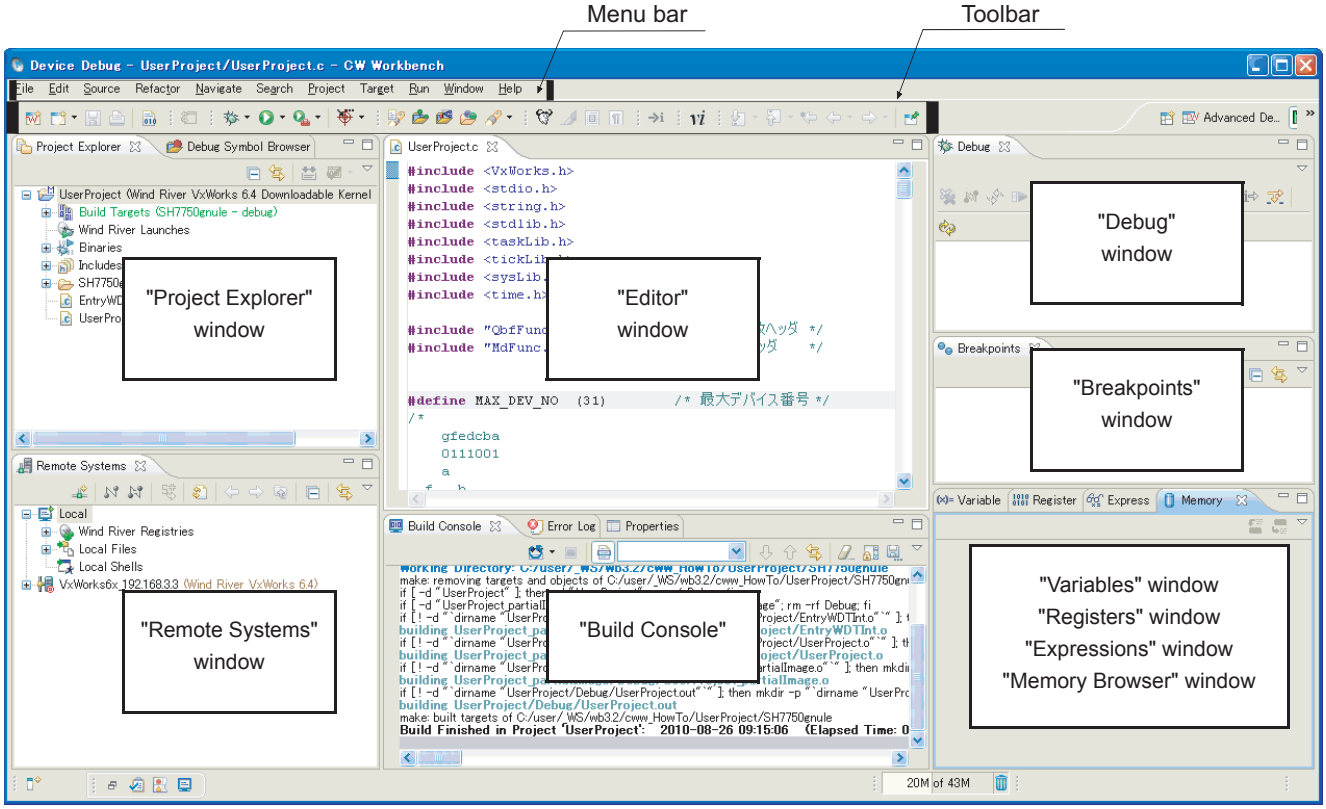


4. **Click the** Finish **button.**

Completed

CHAPTER 8 CREATING AND BUILDING USER PROGRAM

The layout of CW Workbench is shown below.

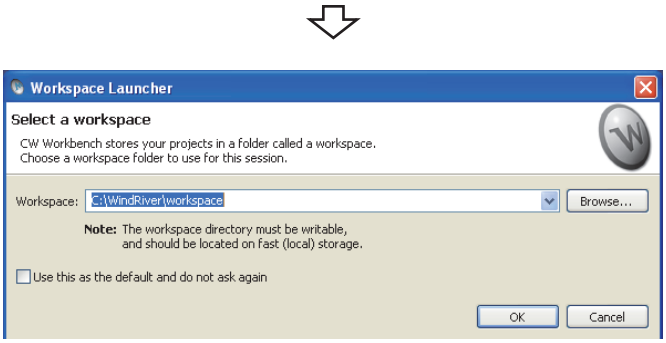


The layout of each window can be changed by dragging with the mouse. The layout shown above is the default layout.

8.1 Creating Project

(1) How to create a project

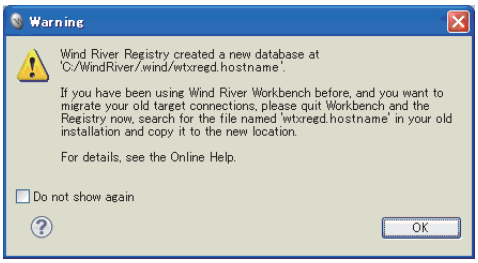
1. **To start CW Workbench, select [Start] ⇨ [All Programs] ⇨ [Wind River] ⇨ [CW Workbench] ⇨ [CW Workbench].**


Workspace Launcher
Select a workspace
CW Workbench stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.
Workspace:
C:\WindRiver\workspace
Browse...
Note: The workspace directory must be writable, and should be located on fast (local) storage.
Use this as the default and do not ask again
OK
Cancel

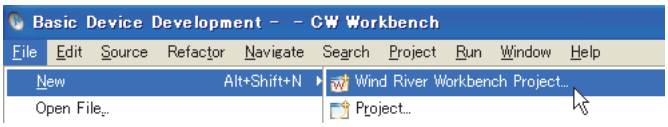
2. **Enter a folder of storage location of workspace for "Workspace:".(A folder can be also selected from the tree view by clicking the Browse... button.) Clicking the OK button starts CW Workbench.**

Remark

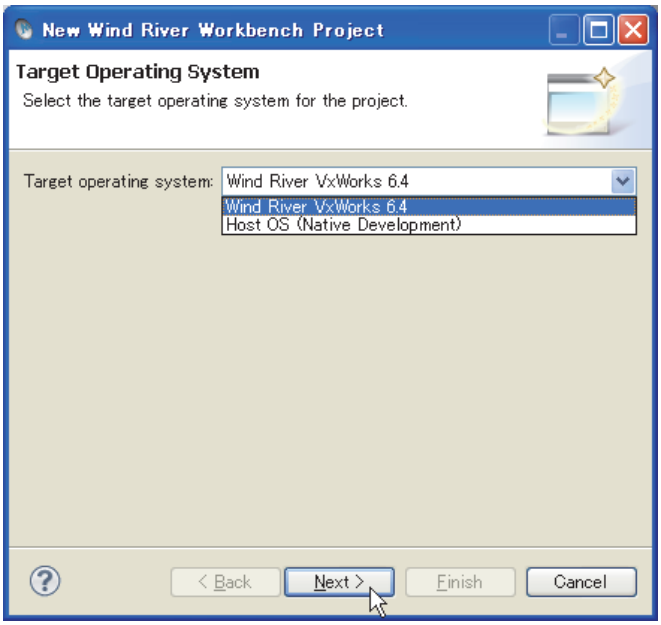
A message box shown below may appear. Click the OK button.


Warning
Wind River Registry created a new database at 'C:/WindRiver/wind/wtxregd.hostname'.
If you have been using Wind River Workbench before, and you want to migrate your old target connections, please quit Workbench and the Registry now, search for the file named 'wtxregd.hostname' in your old installation and copy it to the new location.
For details, see the Online Help.
Do not show again
OK

3. **Select from the menu bar [File] ⇨ [New] ⇨ [Wind River Workbench Project...].**


Basic Device Development - - CW Workbench
File Edit Source Refactor Navigate Search Project Run Window Help
New Alt+Shift+N
Open File...
Wind River Workbench Project...
Project...

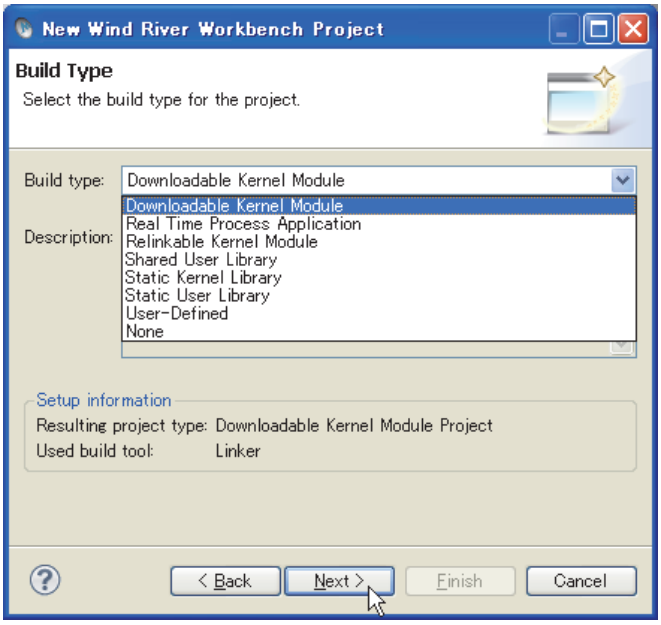
To the next page



4. **Select the following item for "Target operating system:". Click the** Next > **button.**

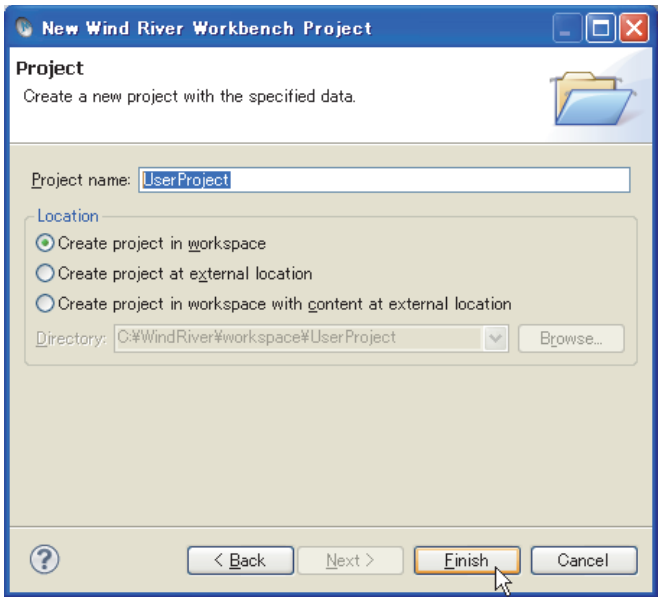
➪ For Q24DHCCPU-V/-VG:
"Wind River VxWorks 6.8"

➪ For Q12DCCPU-V:
"Wind River VxWorks 6.4"



5. **Select "Downloadable Kernel Module" for Build type:". Click the** Next > **button.**

To the next page

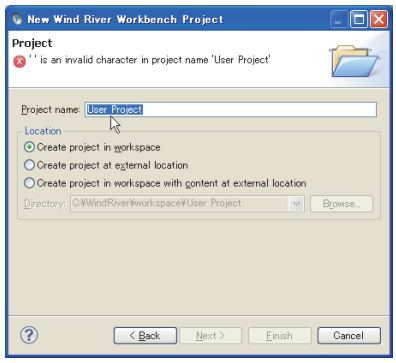


6. **Enter a project name for "Project name:" and click the Finish button.**
"UserProject" has been entered here as an example.

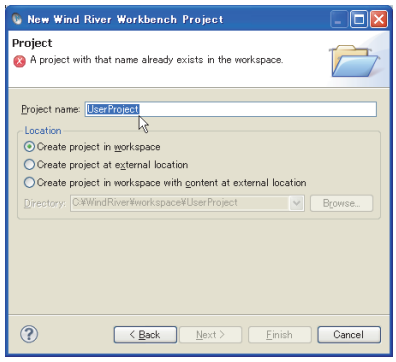
Point

If characters that cannot be used or a project name that is already used are entered for "Project name:", an error text appears on the header of the window and the Finish button becomes disabled.

- If space is included in the "Project name:", the following error message appears.



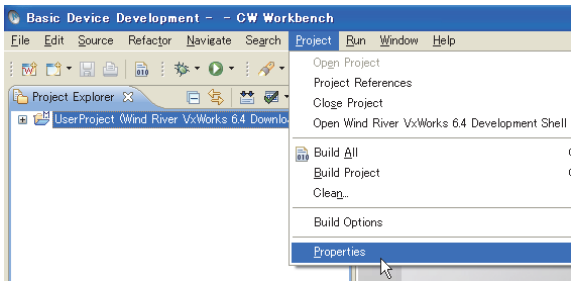
- If a project name that is already used is entered for "Project name:", the following error message appears.



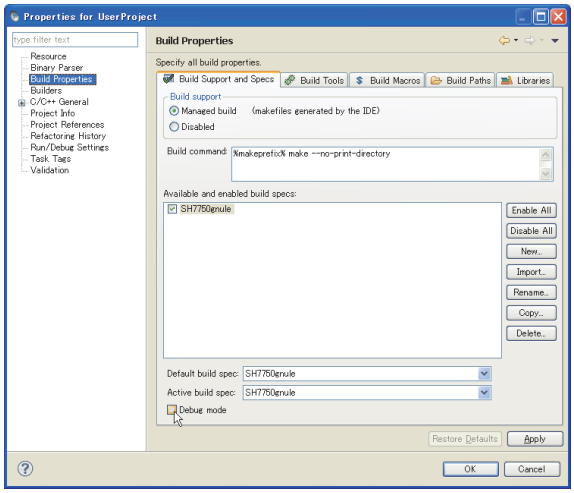
In addition, a space entered at the end of the project name is dropped.

Ex. "UserProject "→ "UserProject"

To the next page



7. **On the "Project Explorer" window, select a project where properties should be set. With the project selected, select from the menu bar [Project] ⇨ [Properties].**



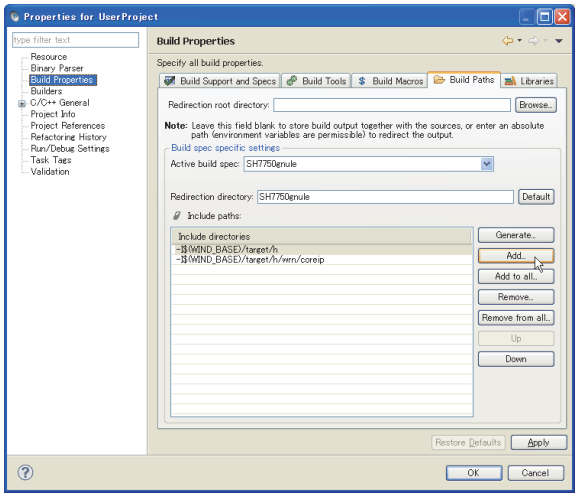
8. **Select [Build Properties] from the tree view to the left on the window, and click the <<Build Support and Specs>> tab. Check that the following item has been selected for "Available and enable build specs:".**

⇨ For Q24DHCCPU-V/-VG:
"PENTIUM4gnu"

⇨ For Q12DCCPU-V:
"SH7750gnule"

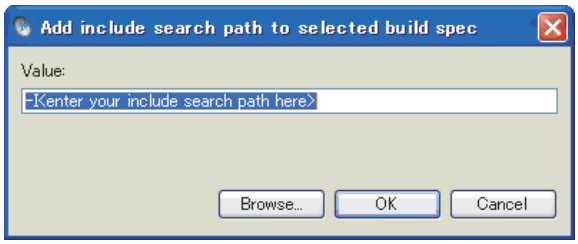
Point

- When the project has been imported, unsupported build specifications may be displayed for "Available and enable build specs:".
  Since this product supports only the following build specifications, clear the check boxes other than the following build specifications.
  ⇨ Q24DHCCPU-V/-VG: "PENTIUM4gnu"
  ⇨ Q12DCCPU-V: "SH7750gnule"
- The default is in the debug mode. Clear the "Debug mode" check box during operation.

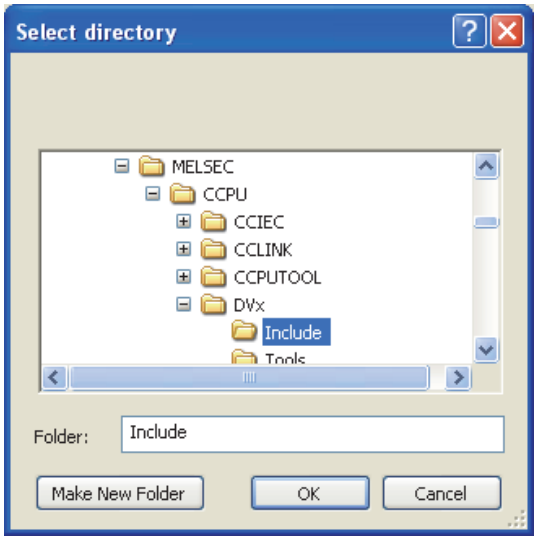


9. **Select "Build Properties" from the tree on the left of the window.**
Open the <<Build Paths>> tab and click the Add... **button.**

To the next page



10. Click the Browse... button.



11. Select the include folder on the "Select directory" window.

Click the OK button.

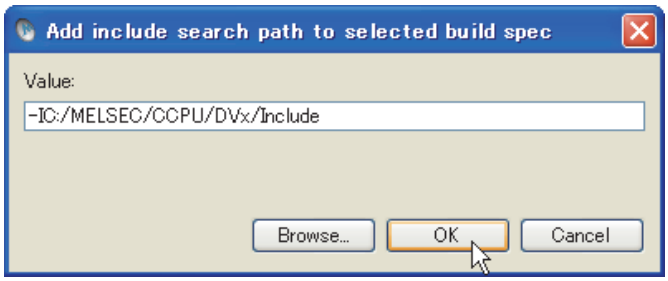
Remark

The include folders differ depending on the C Controller module or Setting/monitoring tools for the C Controller module to be used. For details, refer to the following table.

C Controller module	Setting/monitoring tools for the C Controller module	Include folder *1
Q24DHCCPU-V	SW4PVC-CCPU	C:\MELSEC\CCPU4\Q24DHCCPU-V\Include
Q24DHCCPU-VG		
Q12DCCPU-V (Extended mode)		C:\MELSEC\CCPU4\Q12DCCPU-V\Include
Q12DCCPU-V (Basic mode)	SW3PVC-CCPU	C:\MELSEC\CCPU\DVx\Include

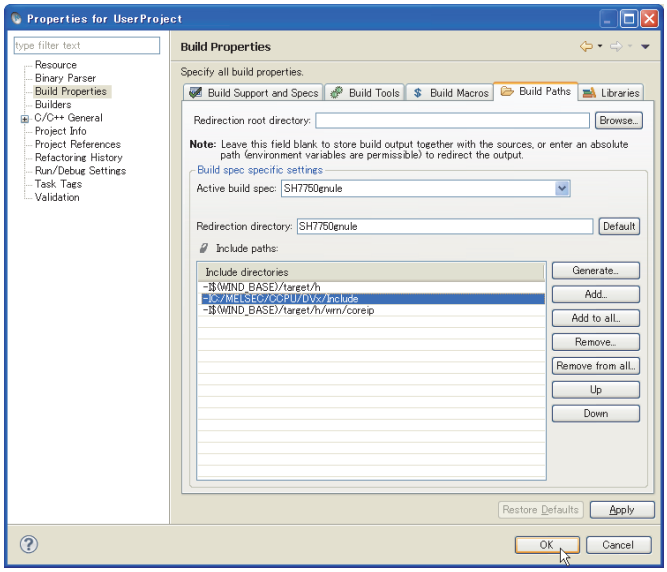
*1 When Setting/monitoring tools for the C Controller module is installed in "C:\MELSEC".

To the next page



12. **Check that the folder specified on the "Select directory" window has been selected.**

Click the OK **button.**

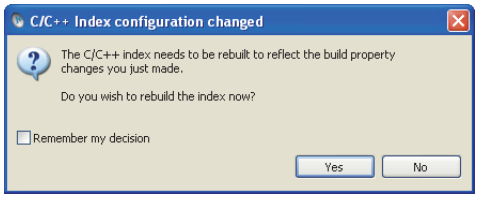


13. **Check that the include path of MELSEC added to "Include directories" in [Include paths:] appears.**

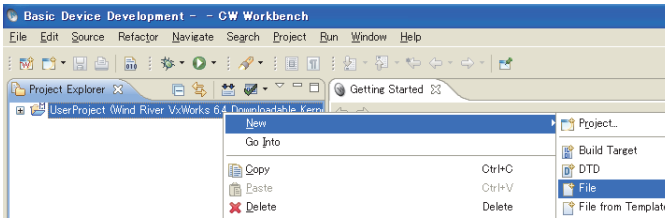
Click the OK **button.**

Point

Click the OK button. If the following message box appears, click the Yes button.


C/C++ Index configuration changed
The C/C++ index needs to be rebuilt to reflect the build property changes you just made.
Do you wish to rebuild the index now?
Remember my decision
Yes
No

To the next page

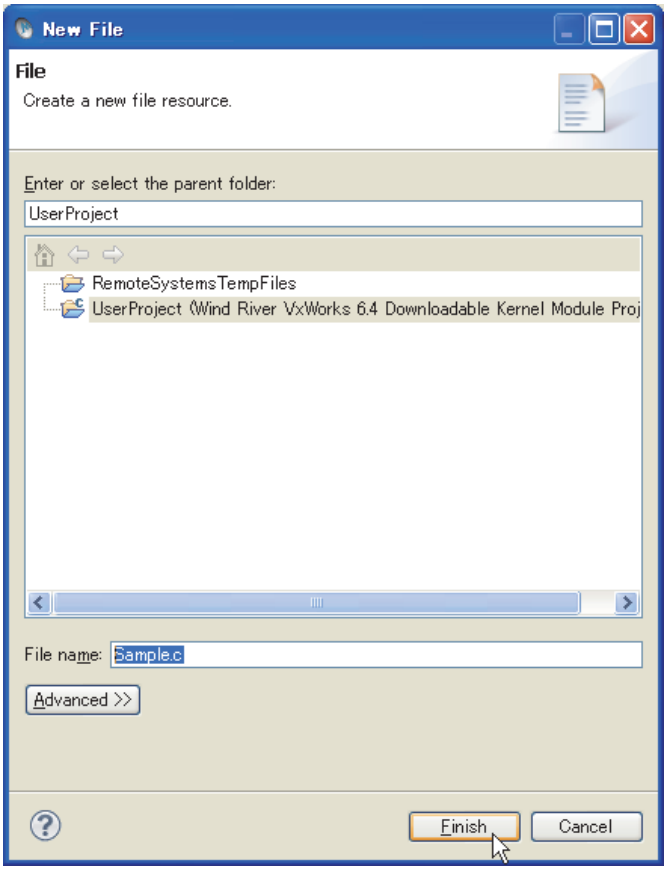


14. **On the "Project Explorer" window, right-click a project where a file is added. Select from the pop-up menu [New] ⇨ [File].**

Point

Various files can be added to the project using the new file addition function ([File] ⇨ "New" ⇨ "File") or "Refresh". However, note the following before adding files to the project:

- Do not add projects with the same name as the project name.
- If a file with the same name as the project name exists in the project, do not use the "Rename" function of CW Workbench for the file.
  - Delete the file from the project if possible. (Note that the file is also deleted from the hard disk.)
  - Change the file name on the Explorer if the file cannot be deleted. After changing the file name on the Explorer, execute "Refresh" in the pop-up menu of the project.
  - If a file name is the same as a project name and is changed using "Rename" of CW Workbench, the build cannot be executed.



15. **Enter a file name of a source file for "File name:".**

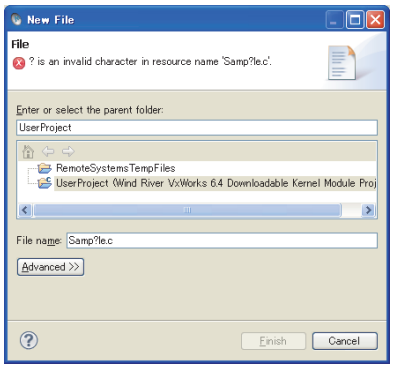
Click the Finish **button.**

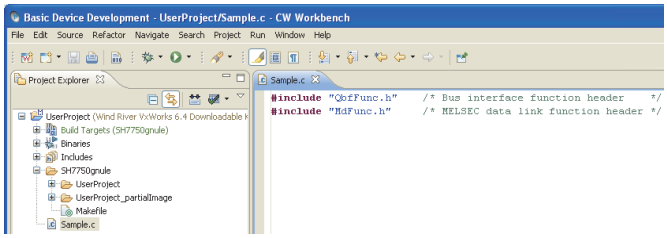
"Sample.c" has been entered here as an example.

To the next page

Point

- Enter a file name with extension (.c, .h, .cpp, .hpp) for "File name:"
- Do not use two-byte characters for a file name. Do not execute the compile for a file that has a name including two-byte characters, or a compile error occurs.
- If characters that cannot be used or a project name that is already used are entered for "File name:", an error text appears on the header of the window and the Finish button becomes disabled.





Completed

16. Edit the source files on the "Editor" window and include the following include files:

➪ For Q24DHCCPU-V/-VG

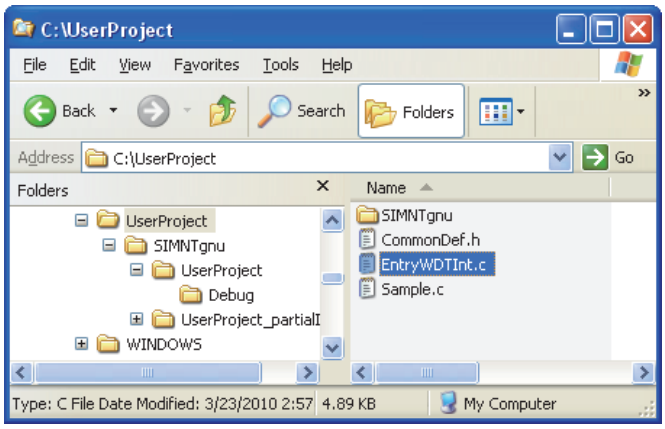
- Bus interface function: "QbfFunc.h"
- MELSEC data link function: "Mdfunc.h"
- C Controller module dedicated function: "CcpuFunc.h"

➪ For Q12DCCPU-V

- Bus interface function: "QbfFunc.h"
- MELSEC data link function: "Mdfunc.h"

(2) Adding source file

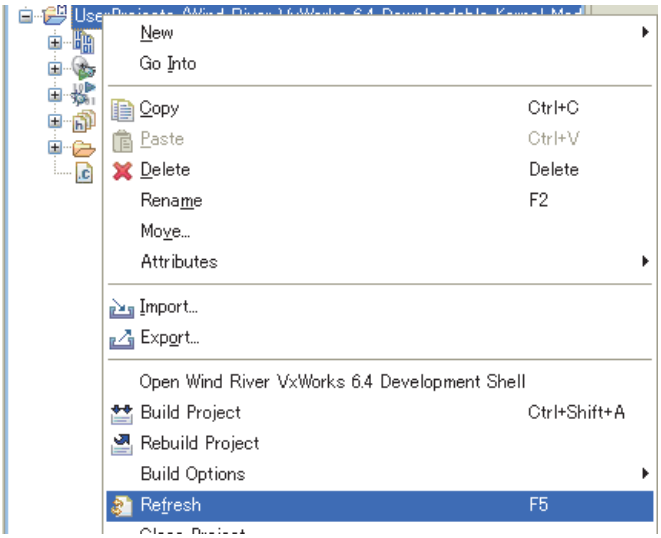
Follow the instructions below to add a source file that has been already created to the project.



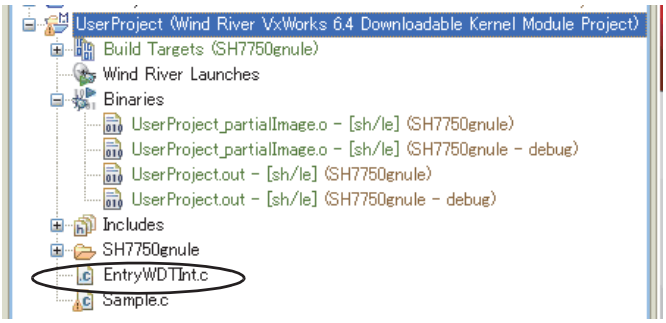
1. **Copy the created source file to the current folder of a project to be added.**

Ex.

Copy EntryWDTInt.c to the current folder of the project to be added (UserProject) on the Explorer.



2. **Select the project to be added on the "Project Explorer" window. Select "Refresh" in the pop-up menu.**



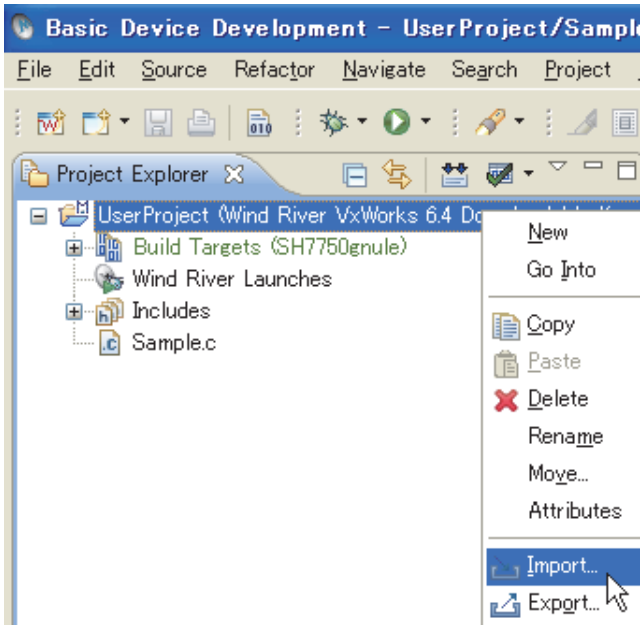
3. **The file "EntryWDTInt.c" copied in the step 1 has been added to the project.**

Completed

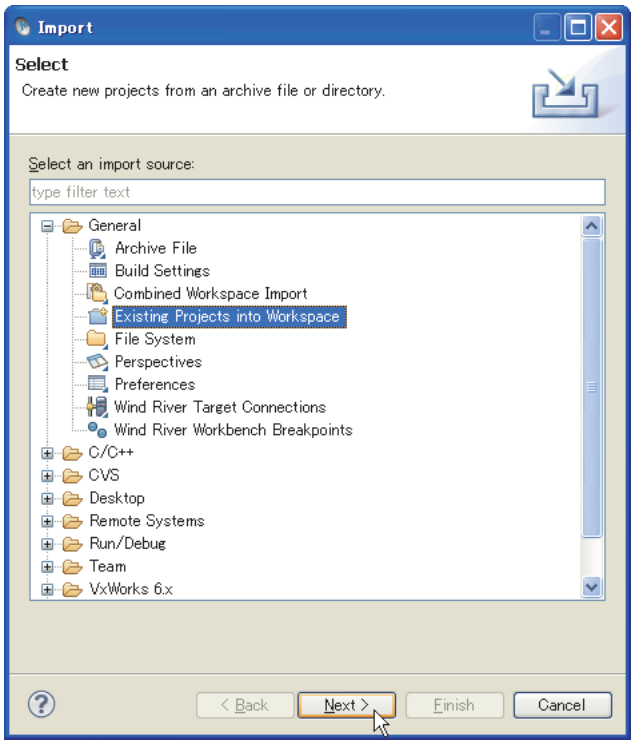
8.2 Adding Project

In CW Workbench, multiple projects can be managed on the same workspace by adding other projects following the instructions below.

Ex. Adding a C Controller module sample project (EntryWDTInt)



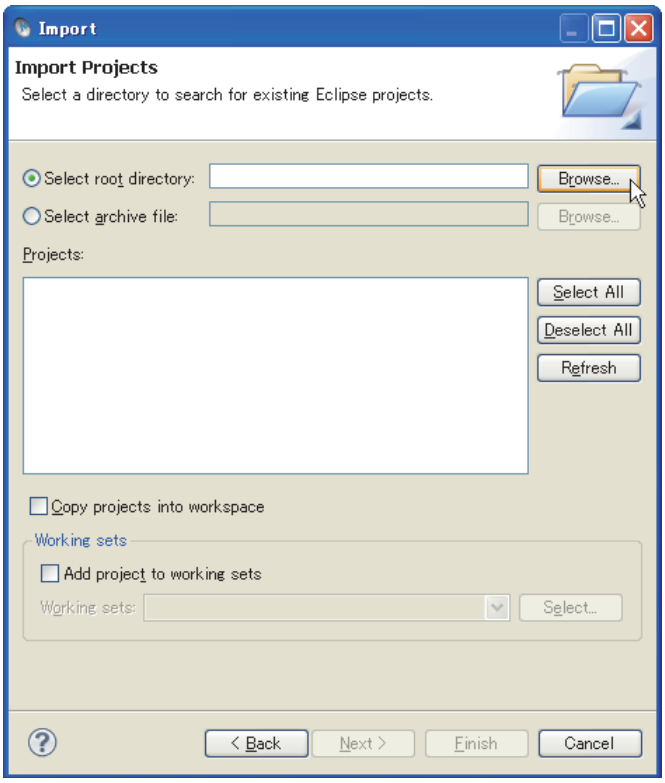
1. **Right-click on the "Project Explorer" window and select "Import...".**



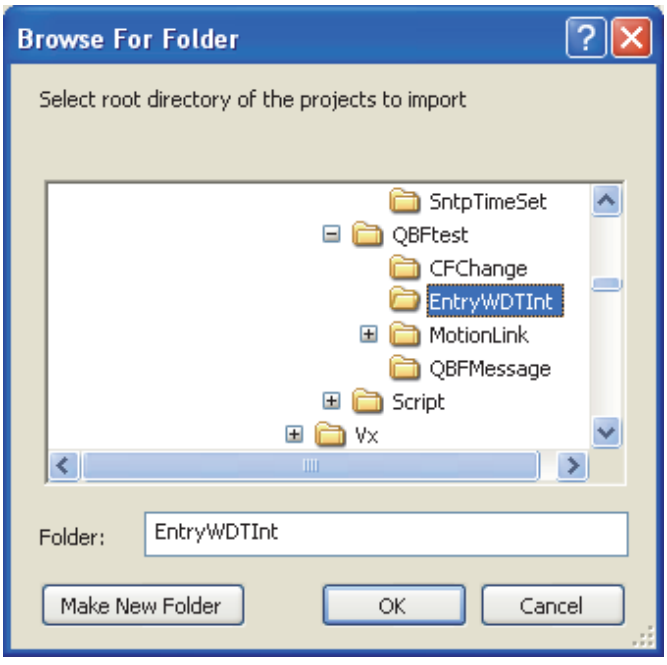
2. **Select "General" ⇨ "Existing Projects into Workspace".**

Click the Next > **button.**

To the next page

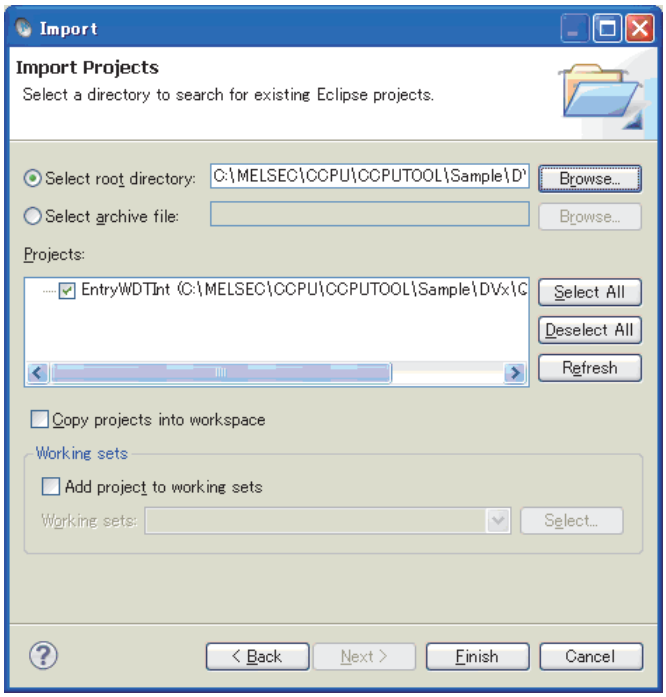


3. **Select "Select root directory:" radio button and click the Browse... button.**



4. **Select the folder where the project to be imported is stored and click the OK button.**

To the next page



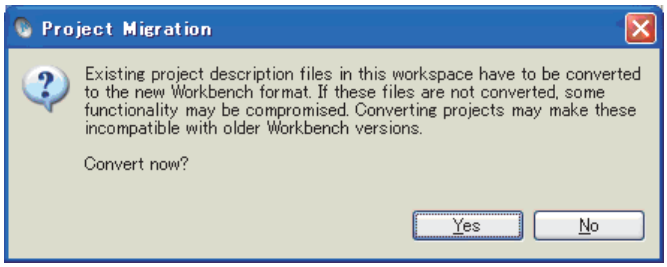
5. **A list of the projects stored in the folder (including subfolders) specified in "Select root directory:" is displayed in "Projects:". Check that the project to be imported has been selected.**

Click the Finish **button.**

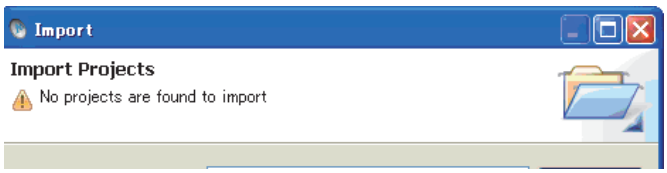
Point

When a project created in Wind River Workbench 2.6.1 is imported, the following message appears.

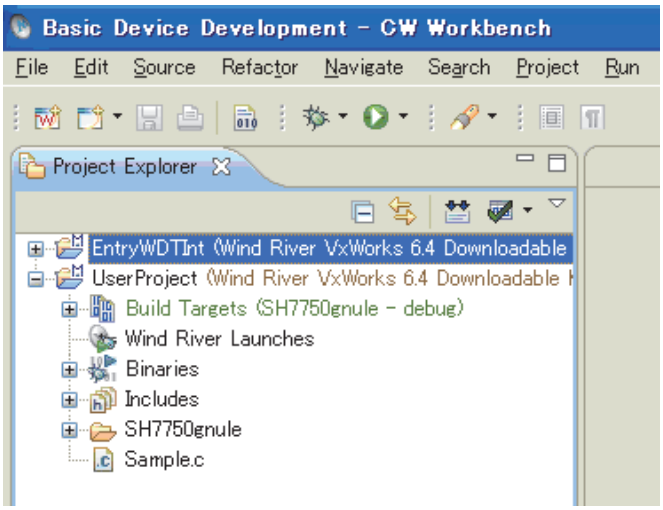
Click the Yes button.


Project Migration
Existing project description files in this workspace have to be converted to the new Workbench format. If these files are not converted, some functionality may be compromised. Converting projects may make these incompatible with older Workbench versions.
Convert now?
Yes
No

The following warning message appears on the header of the window when there is no project that can be imported in the specified folder.



To the next page

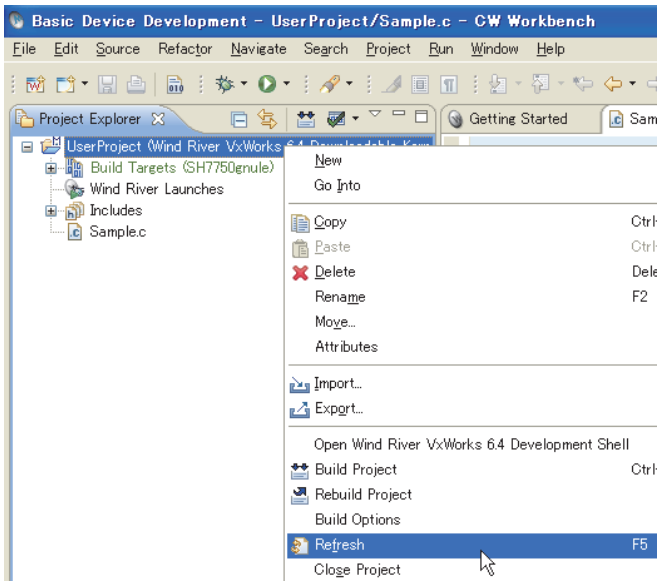


Completed

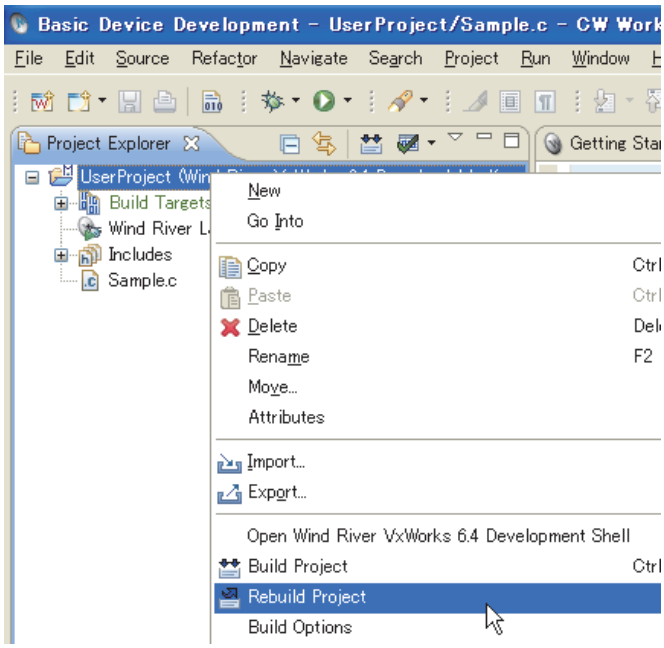
6. **The specified "EntryWDTInt" project has been imported to the workspace.**

8.3 How to Build Project

Follow the instructions below for how to build the project.

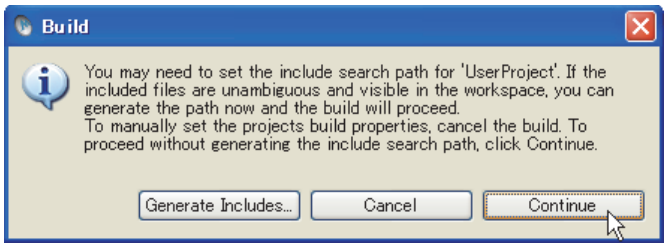


1. **On the "Project Explorer" window, right-click on a project name to be built. In the menu that pops up, select [Refresh].**

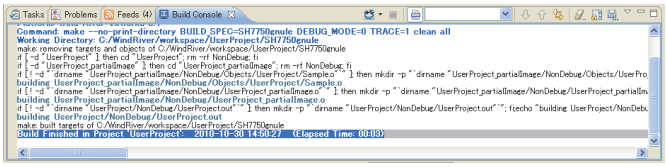


2. **On the "Project Explorer" window, right-click on a project name to be built. In the menu that pops up, select [Rebuild Project].**

To the next page


Build
You may need to set the include search path for 'UserProject'. If the included files are unambiguous and visible in the workspace, you can generate the path now and the build will proceed.
To manually set the projects build properties, cancel the build. To proceed without generating the include search path, click Continue.
Generate Includes...
Cancel
Continue

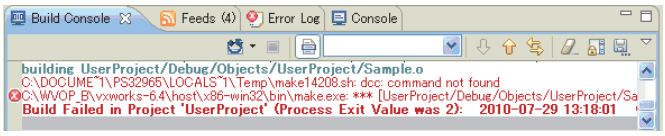
3. **If the message shown to the left appears, click the Continue button.**



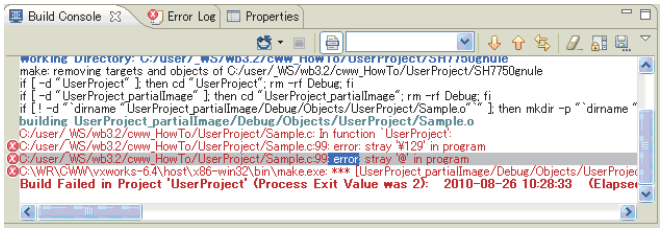
4. **The build process is displayed on the "Build Console" window.**
"Build Finished..." is displayed after the build is completed. Check for error indication (red) on the "Build Console" window.

Point

- If the following error "command not found" occurs for the build result, an unsupported compiler may have been used. Check that only the following build specification has been selected for the <<Build Support and Specs>> tab in [Build Properties] of the project. If check boxes of build specifications other than the following have been selected, clear them. (☞ Page 56, Section 8.1)
  - ➪ Q24DHCCPU-V/-VG: "PENTIUM4gnu"
  - ➪ Q12DCCPU-V: "SH7750gnule"

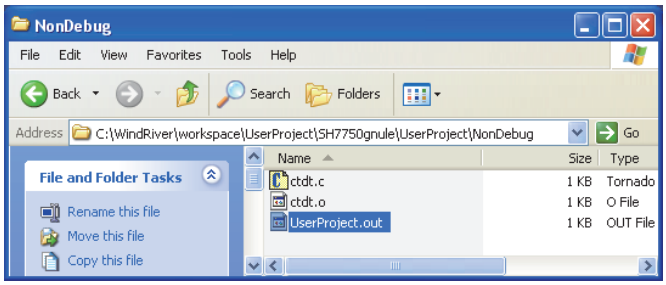


- If the build result has an error, error information (source file name, line number, and error details) is displayed in red. Correct source codes in the error part.
  Execute the build again after correction. Repeatedly correct and build the source codes until the build result is not colored red.


Build Console
Error Log
Properties
make: removing targets and objects of C:/user/_WS/wb3.2/cww_HowTo/UserProject/SH7750gnule
if [-d "UserProject"]; then cd "UserProject"; rm -rf Debug; fi
if [-d "UserProject_partialImage"]; then cd "UserProject_partialImage"; rm -rf Debug; fi
if [! -d "`dirname "UserProject_partialImage/Debug/Objects/UserProject/Sample.o"`"]; then mkdir -p "`dirname "
building UserProject_partialImage/Debug/Objects/UserProject/Sample.o
C:/user/_WS/wb3.2/cww_HowTo/UserProject/Sample.c: In function `UserProject':
C:/user/_WS/wb3.2/cww_HowTo/UserProject/Sample.c:99: error: stray '¥129' in program
C:/user/_WS/wb3.2/cww_HowTo/UserProject/Sample.c:99: error: stray '@' in program
C:\WR\CWW\vxworks-6.4\host\x86-win32\bin\make.exe: *** [UserProject_partialImage/Debug/Objects/UserProje
Build Failed in Project 'UserProject' (Process Exit Value was 2): 2010-08-26 10:28:33 (Elapse

Double-clicking the error line where a source file name and a line number are displayed jumps to the error location of the source file.

To the next page



5. **After the build is completed, execution file (user program) to be used on the C Controller module is created.**
If an error occurs during the build, a user program is not created.
A file name of the user program is "<Project name.out>".

Remark

Folders where a user program is created:

- In Debug Mode:
  - ⇨ For Q24DHCCPU-V/-VG:
    <Workspace folder>\<Project name folder>\PENTIUM4gnu\<Project name folder>\Debug
  - ⇨ For Q12DCCPU-V:
    <Workspace folder>\<Project name folder>\SH7750gnule\<Project name folder>\Debug
- In Release Mode:
  - ⇨ For Q24DHCCPU-V/-VG:
    <Workspace folder>\<Project name folder>\PENTIUM4gnu\<Project name folder>\NonDebug
  - ⇨ For Q12DCCPU-V:
    <Workspace folder>\<Project name folder>\SH7750gnule\<Project name folder>\NonDebug

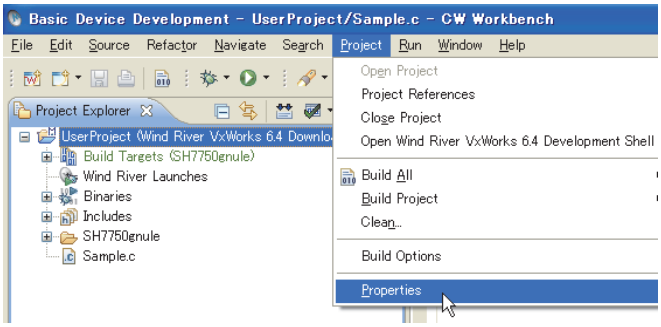
When a user program is created on a project imported, the folders above change depending on structures of folders and projects where the imported project exists.
Check the folders where a user program is created on the imported project.

⇩

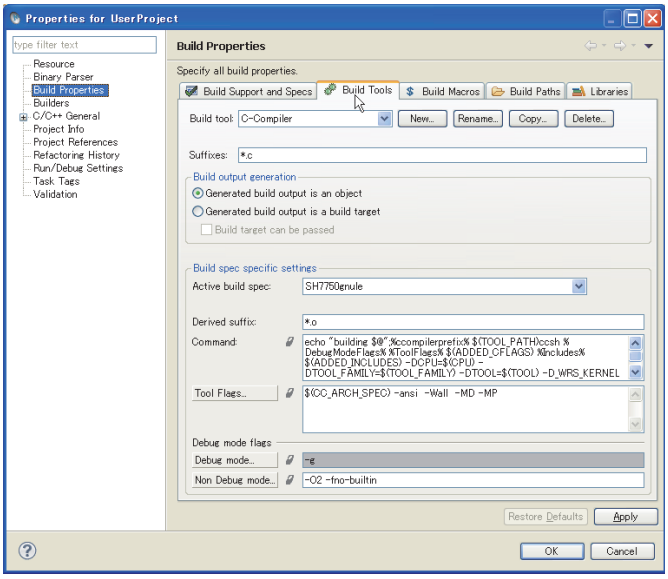
Completed

8.4 Setting Optimization Option

This section explains how to set an optimization option that prioritizes the processing speed.

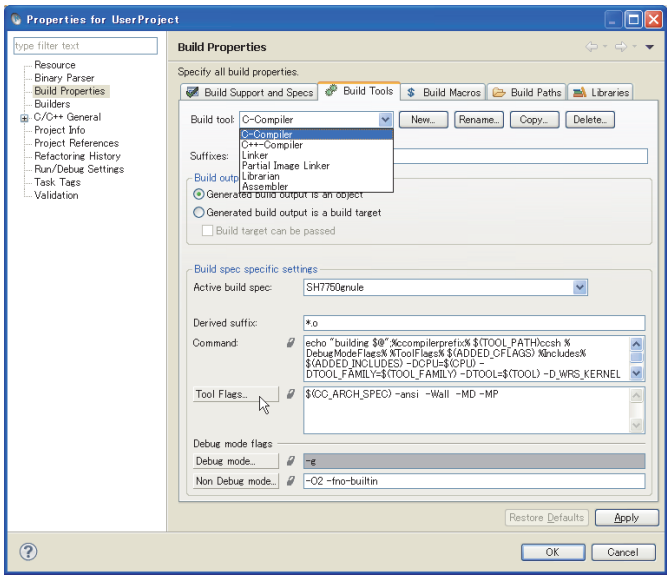


1. **Select a project where the optimization option is set. Select from the menu bar [Project] ⇨ [Properties].**



2. **Select [Build Properties] from the tree view to the left on the window.**
Click the <<Build Tools>> tab.

To the next page

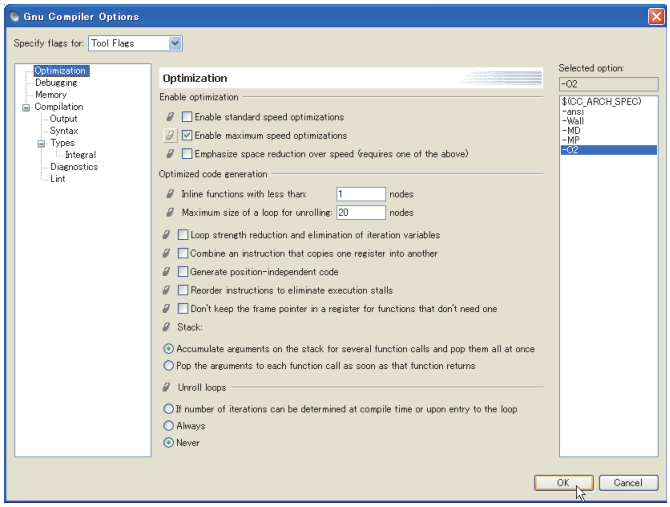


3. **Select "C-Compiler" for "Build tool:".**

Click the Tool Flags... button.

Remark

Select "C++-Compiler" for C++.

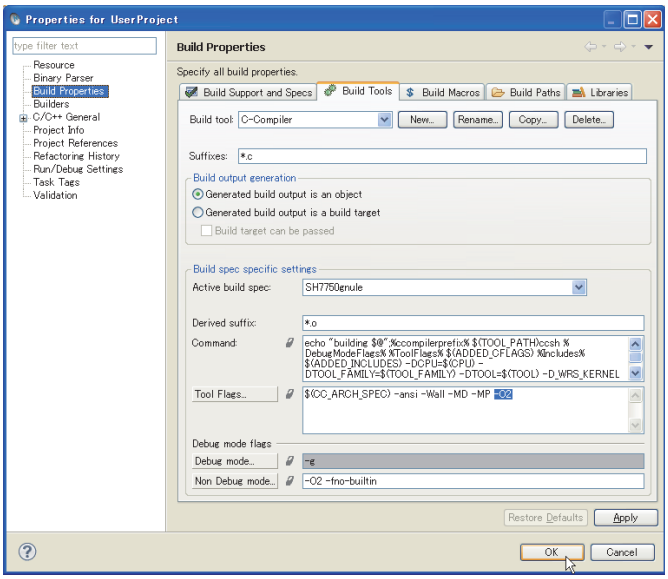


4. **On the "Optimization" dialog box, select [Enable maximum speed optimizations]. Check that "-O2" has been added to "Selected option:" and click the OK button.**

Point

To cancel the optimization option, click in "Enable Optimization" on "Optimization" and change the mark to (cancel). Check that "-O*" has been deleted from "Selected option:".

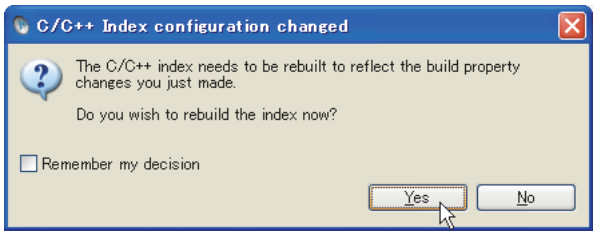
To the next page



Completed

5. **Check that "-O2" has been added to [Tool Flags...] in "Build Properties" and click the OK button.**

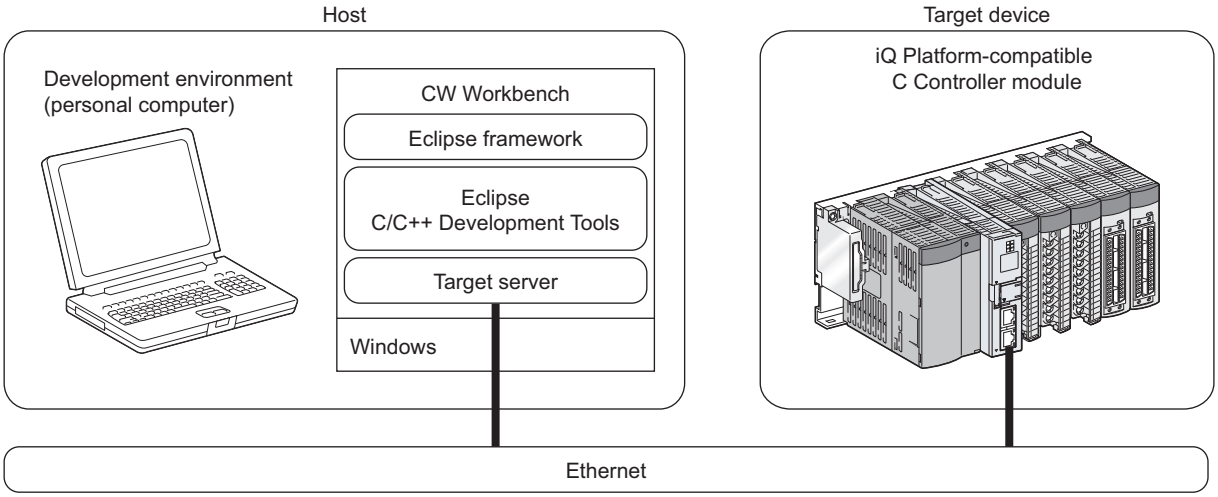
After the OK button is clicked, the following message appears. Click the Yes button.


C/C++ Index configuration changed
The C/C++ index needs to be rebuilt to reflect the build property changes you just made.
Do you wish to rebuild the index now?
Remember my decision
Yes
No

CHAPTER 9 CONNECTING CW WORKBENCH TO THE C CONTROLLER MODULE

9.1 Setting Target Server

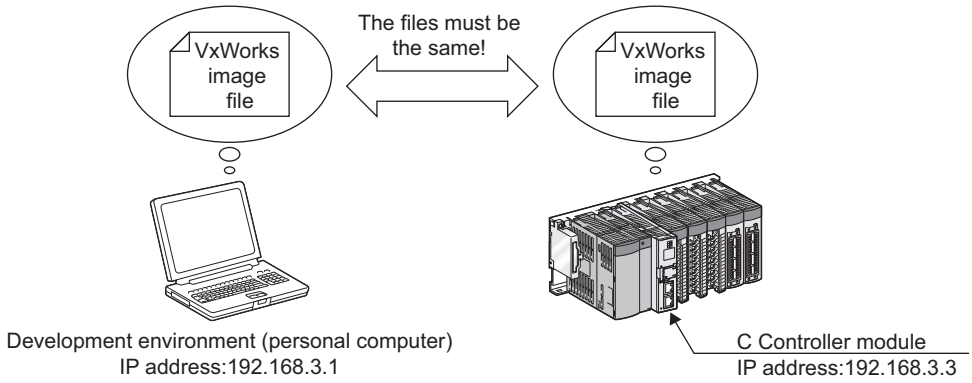
The host (CW Workbench) and the target device (C Controller module) communicate through the target server (on the CW Workbench) and the C Controller module.
Below is a setting procedure to establish communication.



9.1.1 Preparing for target server setting

The following settings are required for CW Workbench to connect to the C Controller module through the target server:

- Setting an IP address of the C Controller module
- Setting a VxWorks image file



Point

VxWorks image files are required to be copied from C Controller module to the development environment (personal computer).

(1) How to acquire a VxWorks image file from the C Controller module

Use the FTP to copy a VxWorks image file on the C Controller module to a folder on the development environment (personal computer).
Do not copy the VxWorks image file to a path or a folder that has two-byte characters and katakana.

A VxWorks image file of the C Controller module is stored in "/SYSTEMROM/OS_IMAGEFILE".

⇨ For Q24DHCCPU-V:

/SYSTEMROM/OS_IMAGEFILE/Q24DHCCPU-V_XXXXX-Y *1

⇨ For Q24DHCCPU-VG:

/SYSTEMROM/OS_IMAGEFILE/Q24DHCCPU-VG_XXXXX-Y *1

⇨ For Q12DCCPU-V (Extended mode):

/SYSTEMROM/OS_IMAGEFILE/Q12DCCPU-V_XXXXX-Y_ModeEX *1

⇨ For Q12DCCPU-V (Basic mode):

/SYSTEMROM/OS_IMAGEFILE/Q12DCCPU-V_XXXXX-Y *1

*1 XXXXX: First five digits of the serial number of the C Controller module
Y: Function version of the C Controller module
For how to check serial numbers and function versions, refer to the following manual.

- For Q24DHCCPU-V/-VG and Q12DCCPU-V (Extended mode) :
  MELSEC-Q C Controller Module User's Manual
- For Q12DCCPU-V (Basic mode):
  C Controller Module User's Manual (Hardware Design, Function Explanation)

Below are the default user name and password to connect CW Workbench to the C Controller module using the FTP:

- User name: target
- Password: password

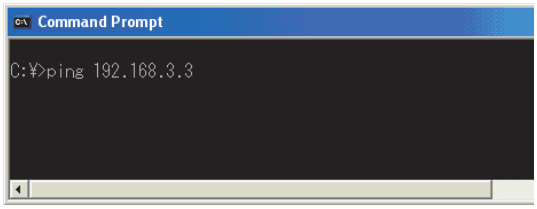
If the default user name and password have been changed, use the user name and the password acquired.

(2) When VxWorks image files are not identical

When the VxWorks image file of the development environment (personal computer) is not identical with that of the C Controller module, copy the image file from the C Controller module to the development environment (personal computer). (☞Page 76, Section 9.1.1 (1))

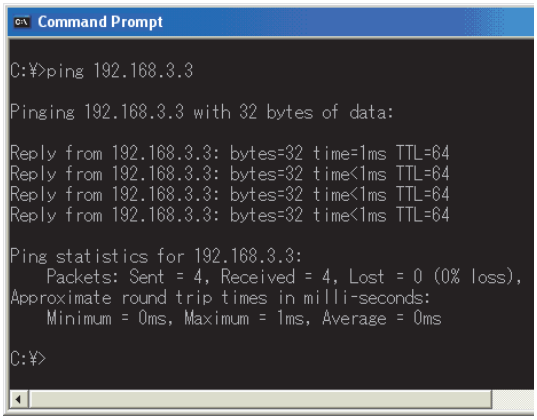
(3) Checking the network connection

Before setting the target server connection, use the ping command to check that the C Controller module, a destination of the target server, is connected to the development environment (personal computer) by following the instructions below.

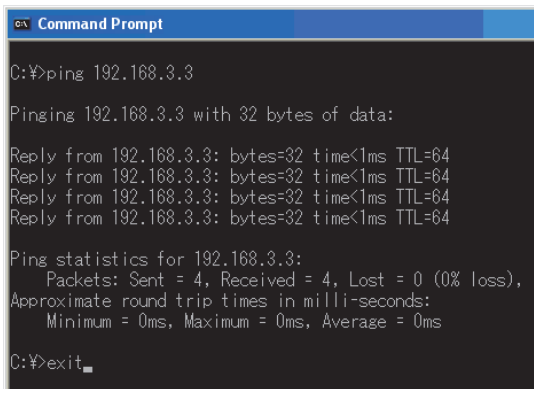


1. **Start [Command Prompt] from the start menu on the development environment (personal computer).**

2. **Execute the ping command.**
Use the IP address of the C Controller module for the IP address specified for an argument in the ping command.
The default IP address of the C Controller module is 192.168.3.3 if not changed.



3. **Check that the development environment is network-connected to the C Controller module.**

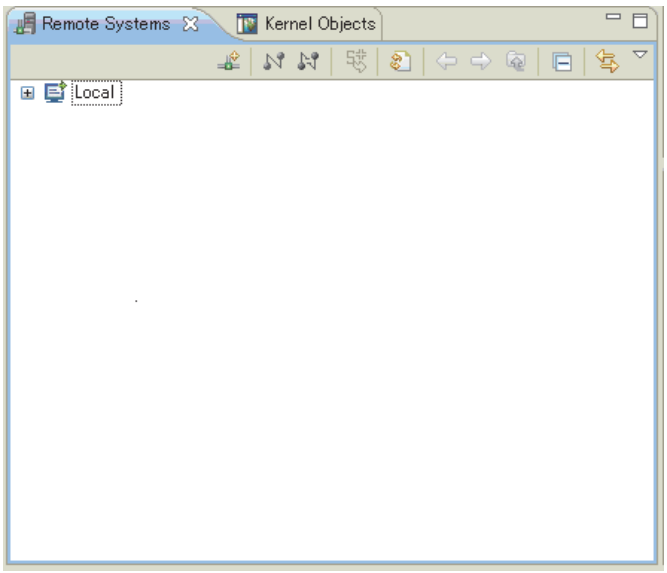


4. **Execute the exit command to terminate the Command Prompt.**

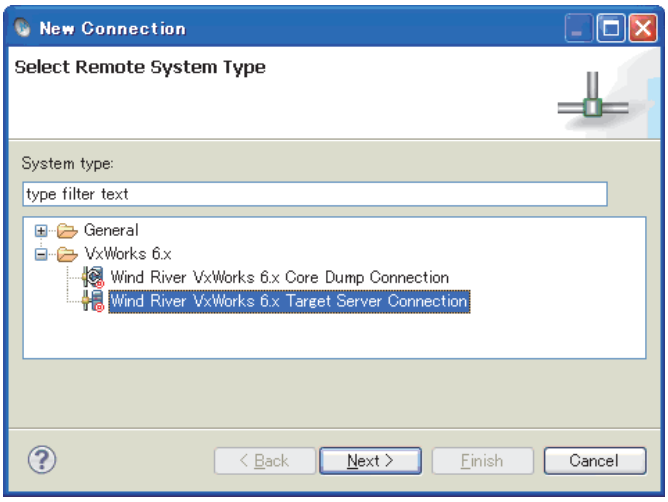
Completed

9.1.2 How to set target server connection

Follow the instructions below to set the target server connection.

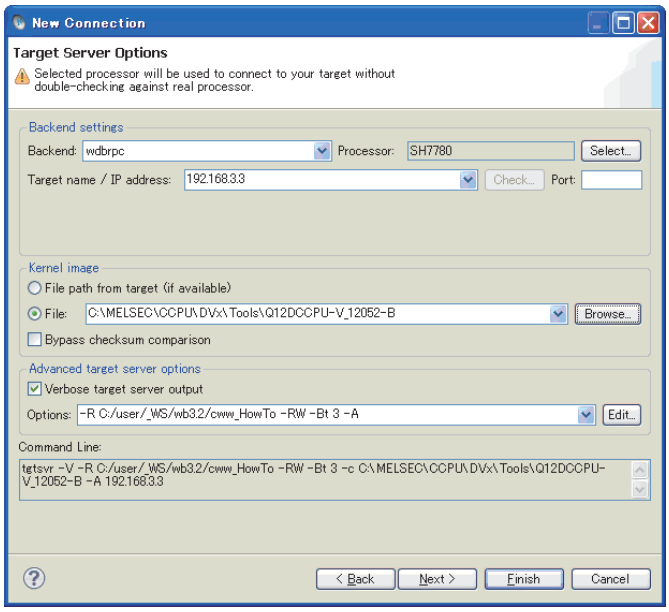


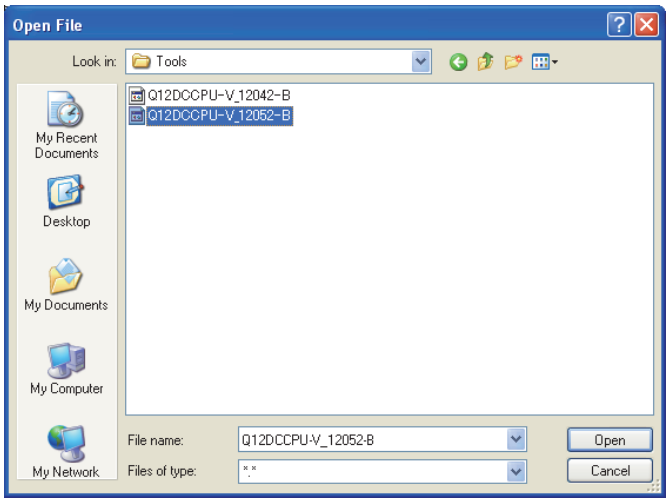
1. **Click the button on the toolbar of "Remote Systems".**



2. **Select "Wind River VxWorks 6.x Target Server Connection" and click the Next > button.**

To the next page





Completed

3. **Set the target connection information for "Backend settings" as shown in the list below.**

Item	Connection information	
	Q24DHCCPU-V Q24DHCCPU-VG	Q12DCCPU-V
Backend	wdbrpc	
Processor	Z5xx	SH7780
IP Address	192.168.3.3(default) (If the default IP address of the C Controller module has been changed, set the IP address acquired.)	

Select the "File" radio button in "Kernel image" and click the Browse... button.

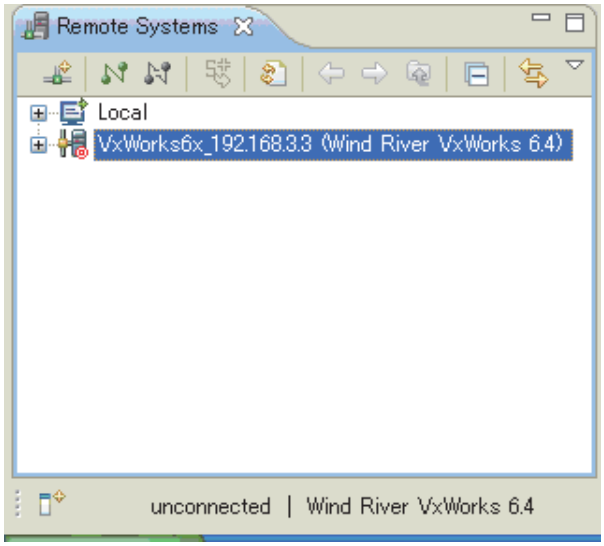
Select the VxWorks image file and click the Open button.
The VxWorks image file specified here should be the same file as that of the C Controller module.
Acquire the VxWorks image file from C Controller module using FTP. (Page 76, Section 9.1.1 (1))

Click the Finish button to start connecting with the C Controller module.

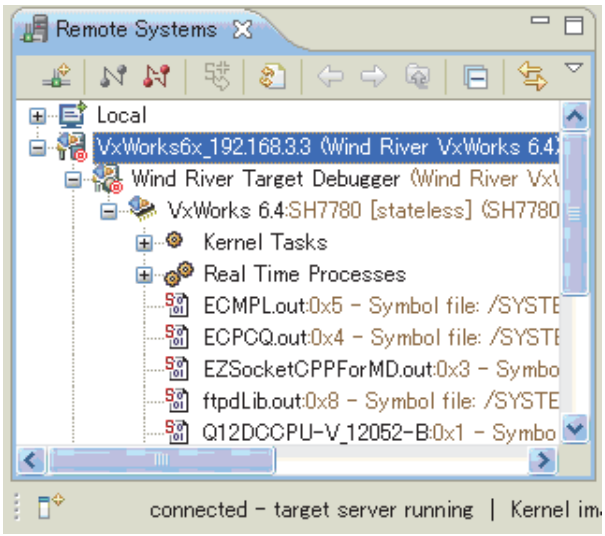
9.2 Starting and connecting the target server

After setting the target server, select the added target server on the "Remote Systems" window. Connection and disconnection can be executed for the C Controller module by clicking the "Connect"( ) or "Disconnect"( )button.

Ex. Below is an example of the window when "VxWorks6x_192.168.3.3 (Wind River VxWorks 6.4)" is selected.

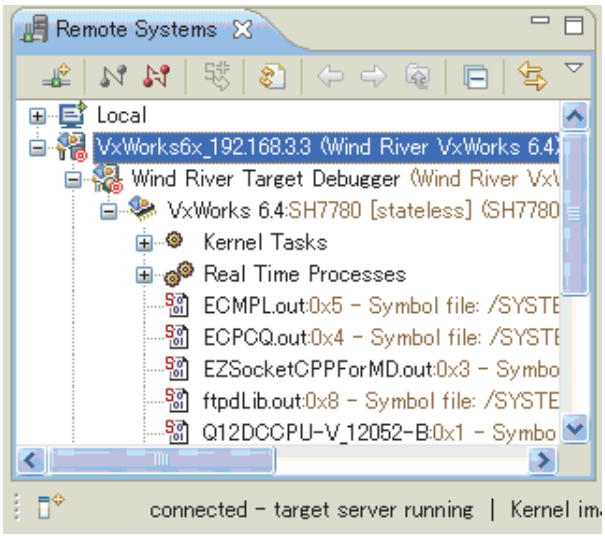


Or select the added target server with the mouse and right-click. Select "Connect" or "Disconnect" from the menu.
Under "Connect", "connected - target server running" is displayed at the bottom of the main window after the target server is started and connected.
Under "Disconnect", "unconnected" is displayed at the bottom of the main window after the target server is disconnected.


Remote Systems
Local
VxWorks6x_192.168.3.3 (Wind River VxWorks 6.4)
Wind River Target Debugger (Wind River Vx
VxWorks 6.4:SH7780 [stateless] (SH7780
Kernel Tasks
Real Time Processes
ECMPL.out:0x5 - Symbol file: /SYSTE
ECPCQ.out:0x4 - Symbol file: /SYSTE
EZSocketCPPForMD.out:0x3 - Symbo
ftpdLib.out:0x8 - Symbol file: /SYSTE
Q12DCCPU-V_12052-B:0x1 - Symbo
connected - target server running | Kernel im

Point

Once the target server is started, the C Controller module is automatically reconnected to the target server after the module is normally started even if the power supply of the module is turned off and on.
To disconnect the target server, select the connected target server on the "Remote Systems" window and click the "Disconnect" button.


Remote Systems
Local
VxWorks6x_192.168.3.3 (Wind River VxWorks 6.4)
Wind River Target Debugger (Wind River Vx
VxWorks 6.4:SH7780 [stateless] (SH7780
Kernel Tasks
Real Time Processes
ECMPL.out:0x5 - Symbol file: /SYSTE
ECPCQ.out:0x4 - Symbol file: /SYSTE
EZSocketCPPForMD.out:0x3 - Symbo
ftpdLib.out:0x8 - Symbol file: /SYSTE
Q12DCCPU-V_12052-B:0x1 - Symbo
connected - target server running | Kernel im

Remark

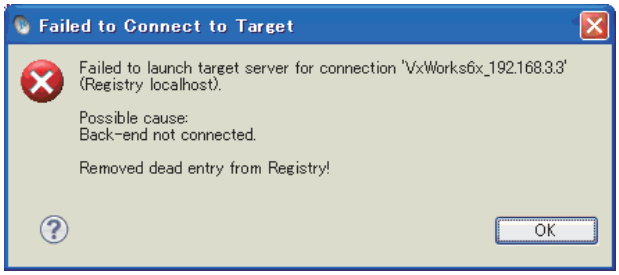
The indication of the "Connect" and "Disconnect" buttons switches between enabled and disabled, depending on the status of connection to the C Controller module.

During disconnection: "Connect"( ) for enabled and "Disconnect"( )for disabled

During connection: "Connect"( ) for disabled and "Disconnect"( )for enabled

Point

The following error message appears if the C Controller module is not running or if the network is not connected while the target server is under "Connect".


Failed to Connect to Target
Failed to launch target server for connection 'VxWorks6x_192.168.3.3' (Registry localhost).
Possible cause:
Back-end not connected.
Removed dead entry from Registry!
OK

If the error shown above occurs, check the following:

- The C Controller module is powered on and is running properly.
- The target server is connected to the C Controller module. (Page 77, Section 9.1.1 (3))

Remark

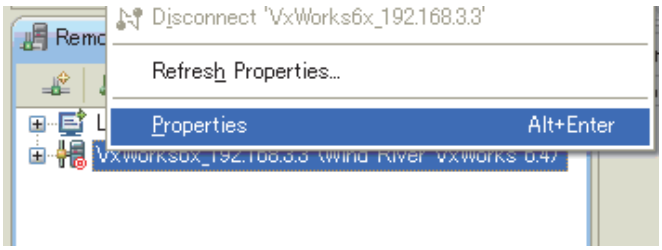
After the target server is started and connected, select the connected target server to use the Host Shell.
For how to start the shell, refer to the following section.

Page 83, Section 10.2

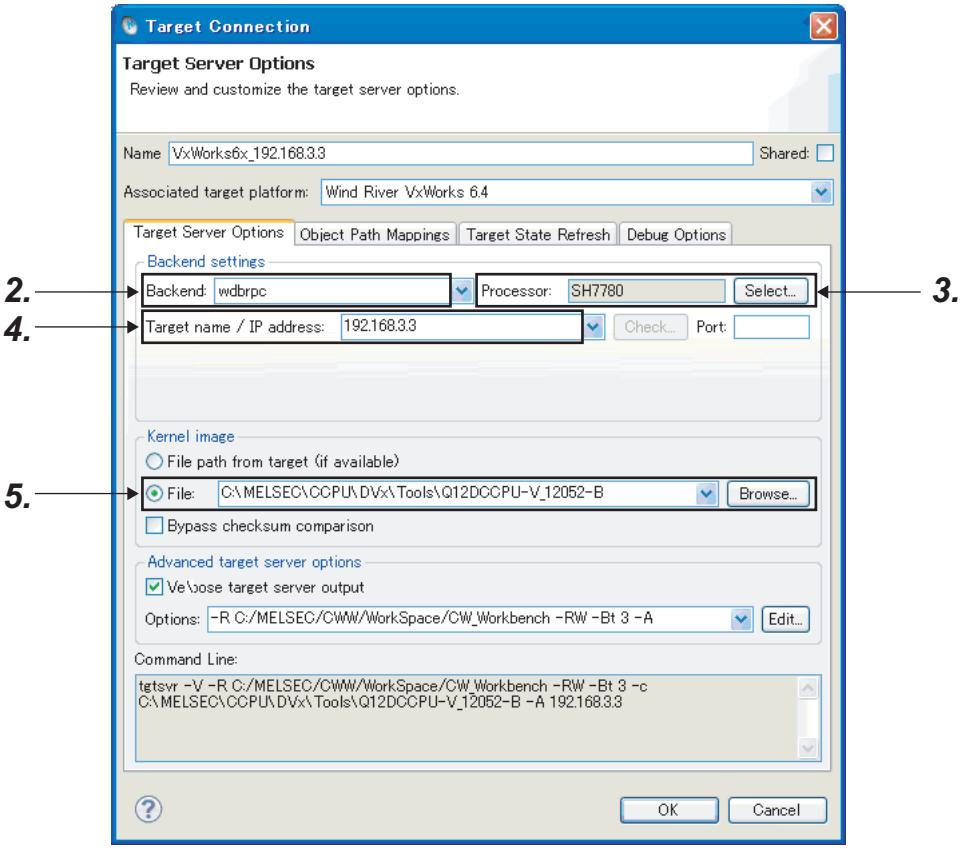
For details on Shell, refer to the following document by selecting [Help] in the menu bar ⇨ [Help Contents] ⇨ "Wind River Documentation" ⇨ "Guides" ⇨ "Host Tools" ⇨ "Wind River Workbench Host Shell User's Guide, 3.2".

9.3 How to Check and Change Connection Settings

If the target server cannot be connected to the C Controller module, follow the instructions below to check and change the connection setting.



1. Select the target server on the "Remote Systems" and right-click to open the pop-up menu. Select [Properties].



2. Check the Backend field.
Enter "wdbrpc" for "Backend".

3. Check the Processor field.
Set "Z5xx" (for Q24DHCCPU-V/-VG) or "SH7780" (for Q12DCCPU-V) for "Processor".

4. Check the IP address of the target device (C Controller module).
Set the IP address of the C Controller module for "Target name/IP address".
The default IP address is 192.168.3.3.

5. Check the Kernel image.
Set the correct VxWorks image file.(☞ Page 76, Section 9.1.1)

Do not change the "Advanced target server options" setting. (The default value is recommended.)

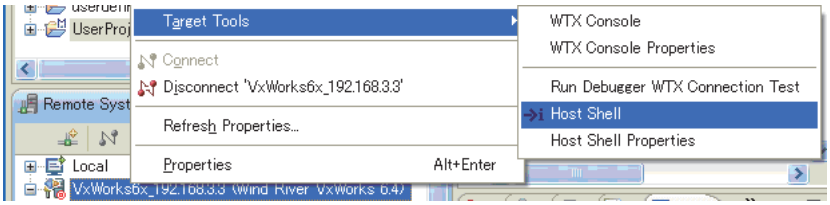
CHAPTER 10 HOW TO DEBUG PROGRAM

10.1 How to Connect CW Workbench to the C Controller Module

- Set the target server.(☞Page 75, Section 9.1)
- Start and connect the target server.(☞Page 80, Section 9.2)

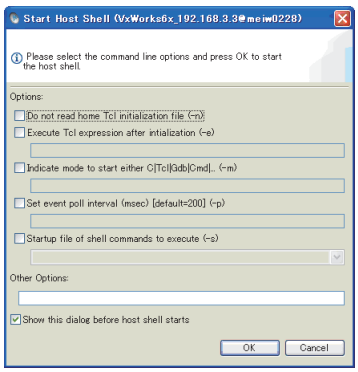
10.2 Starting Shell

On the "Remote Systems" window, select the target server connected to the C Controller module where the shell is started. In the menu that pops up by right-clicking, select [Target Tools] ⇨ [Host Shell] to start the shell.



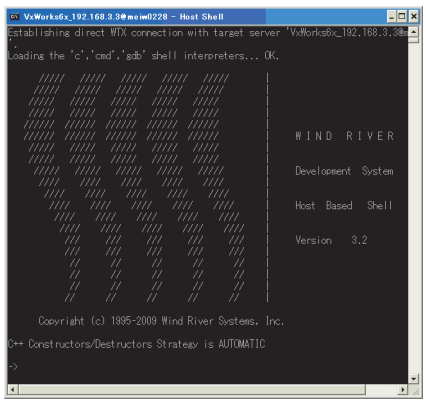
⇩

1. **Click the** OK **button.**


Start Host Shell (VxWorks6x_192.168.3.3@meiw0228)
Please select the command line options and press OK to start the host shell.
Options:
Do not read home Tcl initialization file (-n)
Execute Tcl expression after intialization (-e)
Indicate mode to start either C|Tcl|Gdb|Cmd|.. (-m)
Set event poll interval (msec) [default=200] (-p)
Startup file of shell commands to execute (-s)
Other Options:
Show this dialog before host shell starts
OK
Cancel

⇩

2. **Shell starts.**

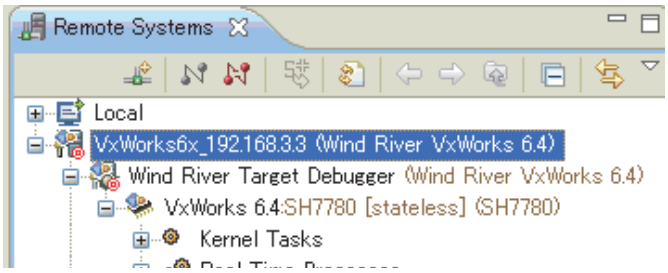

VxWorks6x_192.168.3.3@meiw0228 - Host Shell
Establishing direct WTX connection with target server 'VxWorks6x_192.168.3.3@
Loading the 'c','cmd','gdb' shell interpreters... OK.
WIND RIVER
Development System
Host Based Shell
Version 3.2
Copyright (c) 1995-2009 Wind River Systems, Inc.
C++ Constructors/Destructors Strategy is AUTOMATIC
->

⇩

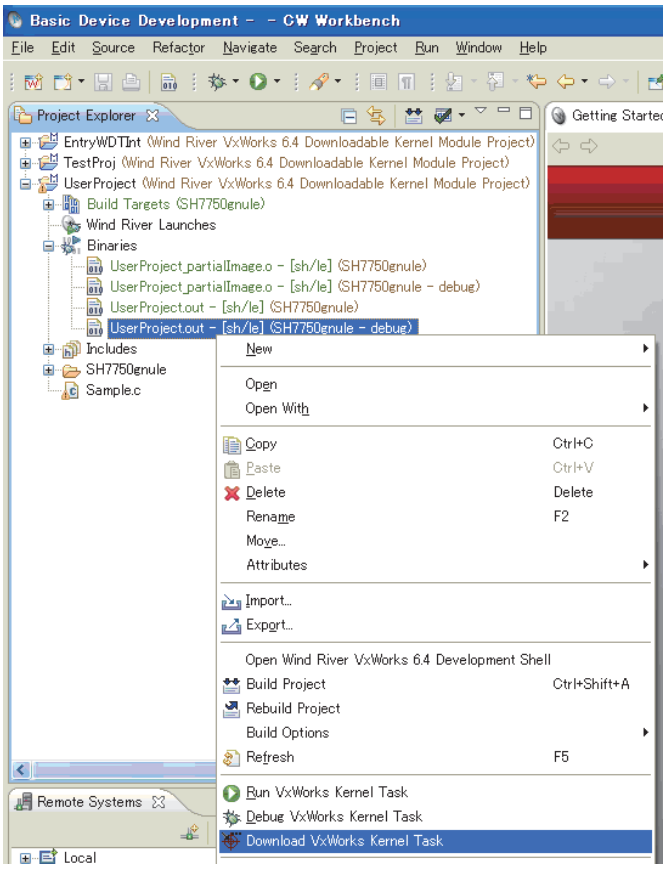
Completed

10.3 Downloading Module

Follow the instructions below to download a module file on the C Controller module.
The module is used for an application, such as to download a file on the memory on the C Controller module and start a task from the shell.



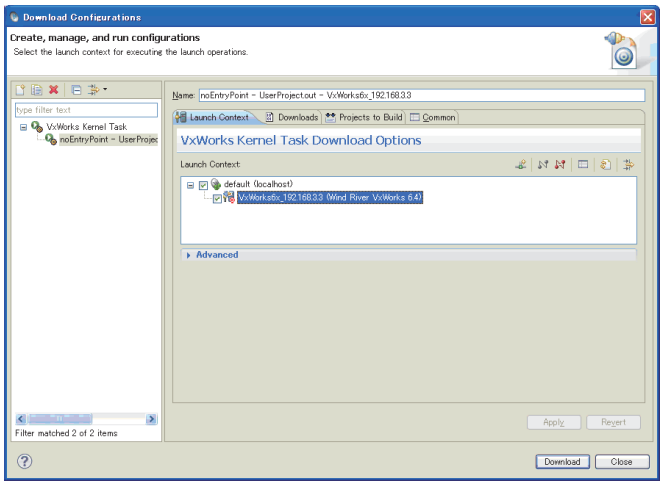
1. **On the "Remote Systems" window, select the target server where the module file is downloaded.**
Select the target server connected to the C Controller module for the target server.



2. **On the "Project Explorer" window, select the module file to be downloaded. In the menu that pops up by right-clicking, select [Download VxWorks Kernel Task].**

"UserProject.out" has been selected for the module file here as an example.

To the next page

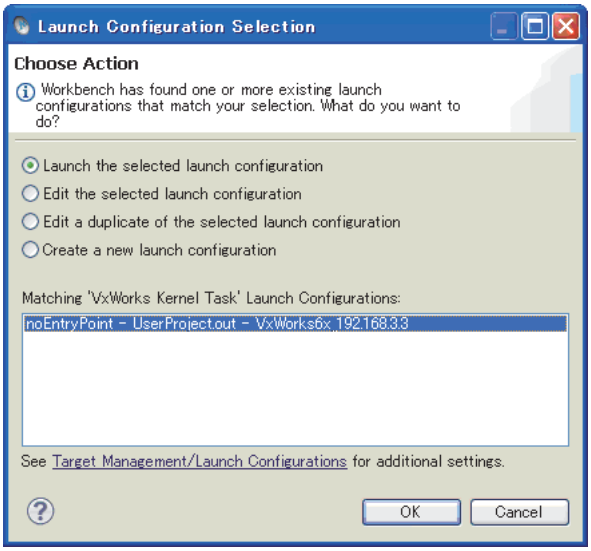


Completed

3. **Click the Download button.**

The module file "UserProject.out" selected in the step 2 has been downloaded on the C Controller module, which is a destination of the target server selected in the step 1.

The following window appears on and after the second operation.
Select "Launch the selected launch configuration" and click the OK button.

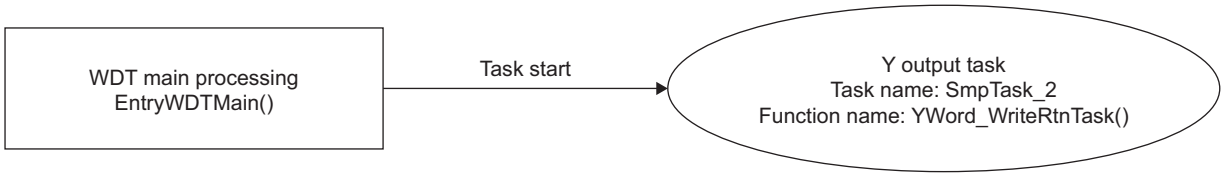

Launch Configuration Selection
Choose Action
Workbench has found one or more existing launch configurations that match your selection. What do you want to do?
Launch the selected launch configuration
Edit the selected launch configuration
Edit a duplicate of the selected launch configuration
Create a new launch configuration
Matching 'VxWorks Kernel Task' Launch Configurations:
noEntryPoint - UserProject.out - VxWorks6x 192.168.3.3
See Target Management/Launch Configurations for additional settings.
OK
Cancel

10.4 How to Debug Program

This section explains how to debug a program by using a sample program (EntryWDTInt.c) of the C Controller module as an example.

(1) Note:

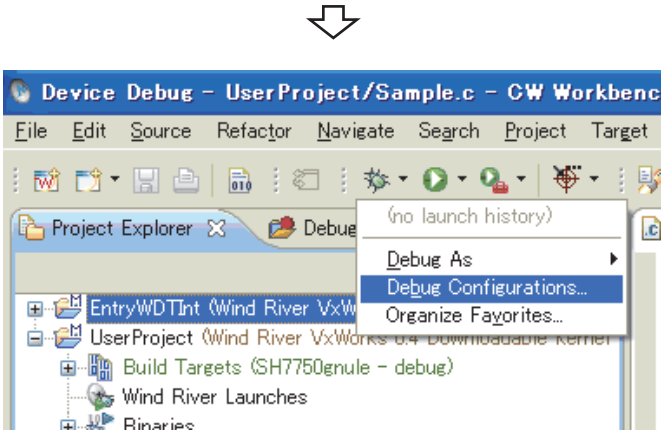
The executing module needs to be built in "Debug Mode" when a project is debugged on CW Workbench.



10.4.1 Debugging one task

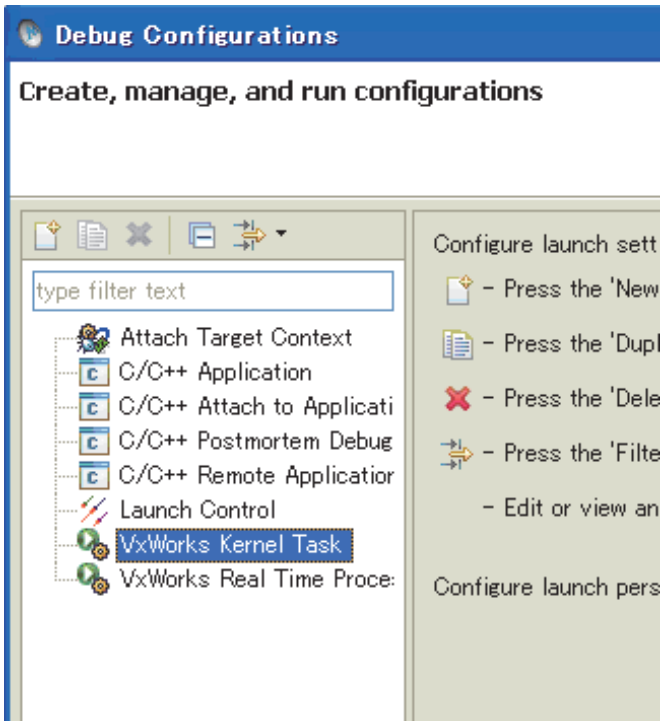
Connect the C Controller module to CW Workbench.

For details,(☞ Page 75, Section 9.1,Page 80, Section 9.2).

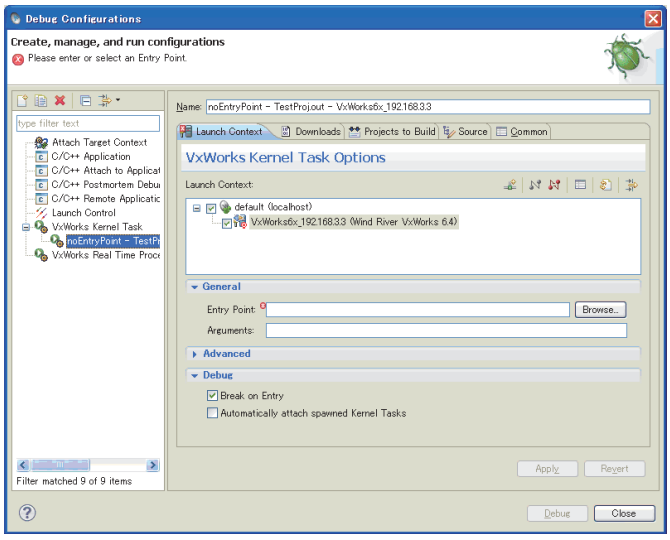


1. **On the "Project Explorer" window, select a project to be debugged. Click the ▼ mark on the right side of a debug icon( ) on the toolbar and select [Debug Configurations...] from the pop-up menu.**

To the next page

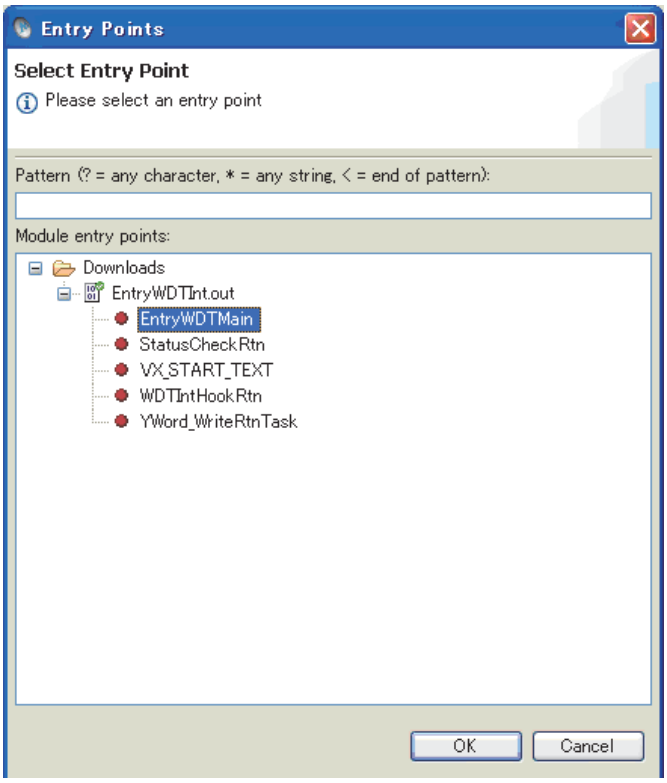


2. **Double-click "VxWorks Kernel Task" to create a new debug configuration.**

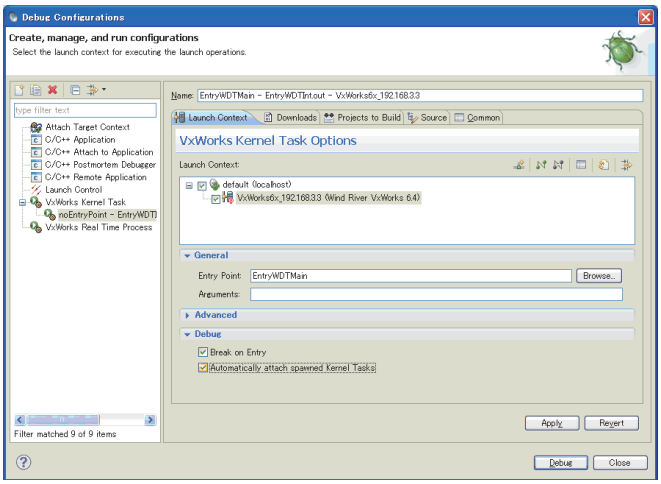


3. **Check that the target server connected to the C Controller module to be debugged has been selected. Click the** Browse... **button.**

To the next page



4. **Select the function (Entry Point) where debugging starts. Click the OK button.**



5. **Check that the function name selected in the step 4 has been selected for "Entry Point:".**
Click the Debug button.

Point

To debug a task created (taskSpawn) from the function specified in "Entry Point:", "Automatically attach spawned Kernel Tasks" at the bottom middle of the dialog box also needs to be selected.

To the next page

EntryWDTInt.c

```
/*  Y output task                                          */
void        YWord_WriteRtnTask();

/*********************************************************/
/*          WDT Main processing                          */
/*********************************************************/
void EntryWDTMain()
{
    short   ret;

    /*  Start the module status monitor task              */
    ret = taskSpawn(TASK_NAME_1,
                    PRIORITY_150,
                    0,
                    STACK,
                    (FUNCPTR)StatusCheckRtn,
                    0, 0, 0, 0, 0, 0, 0, 0, 0, 0);
    if(ret == ERROR){
        printf("StatusCheckRtn task start error  ret = %hd ( %hxH )\
        return;
    }

    /* Start Y output task                                */
    ret = taskSpawn(TASK_NAME_2,
                    PRIORITY_160,
                    0,
                    STACK,
                    (FUNCPTR)YWord_WriteRtnTask,
                    0, 0, 0, 0, 0, 0, 0, 0, 0, 0);
    if(ret == ERROR){
```

6. At first, debugging starts at the beginning of the function specified for "Entry Point:" in the Suspend status.

← The function specified for "Entry Point:"

← The location being suspended is highlighted in green. The display is in the same form as that of when a task is suspended at a breakpoint described in the step 9.

EntryWDTInt.c

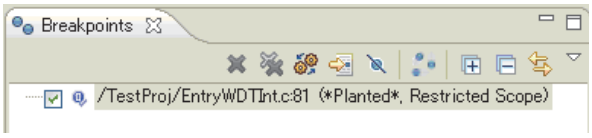
```
    return;
}

/*********************************************************/
/*  Module status monitor processing                     */
/*********************************************************/
void        StatusCheckRtn()
{
    short   ret;
    long    path;
    long    plInfo[15];
    long    event[4];
    unsigned long   ulBufSize;

    /*  Execute QBF_Open                                  */
    ret = QBF_Open(UNIT, &path);
    if(ret != 0){
        printf("QBF_Open error  ret = %hd ( %hxH )\n", ret, ret);
        return;
    }
```

7. Insert the breakpoint to a place where a task operation needs to be suspended.

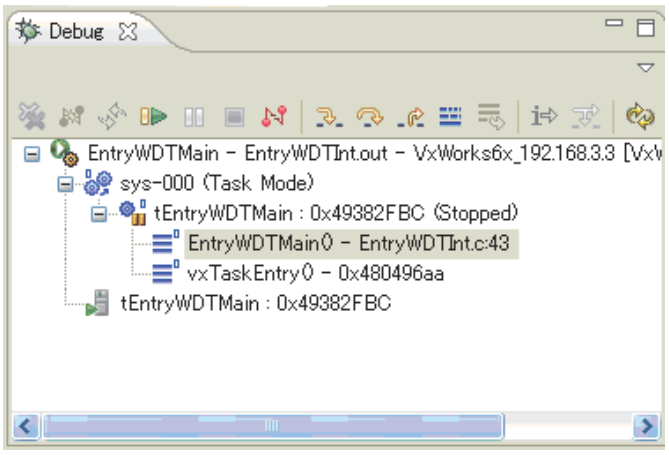
Adding the breakpoint displays breakpoint information inserted on the "Breakpoint" window.
Clearing the check box of the breakpoint information on the "Breakpoints" window disables the breakpoint being inserted without canceling the breakpoint.



Remark

To add a breakpoint, double-click on the left edge of the edit window, at the line where the breakpoint is to be set.
The breakpoint can be removed by a double click once more.

To the next page

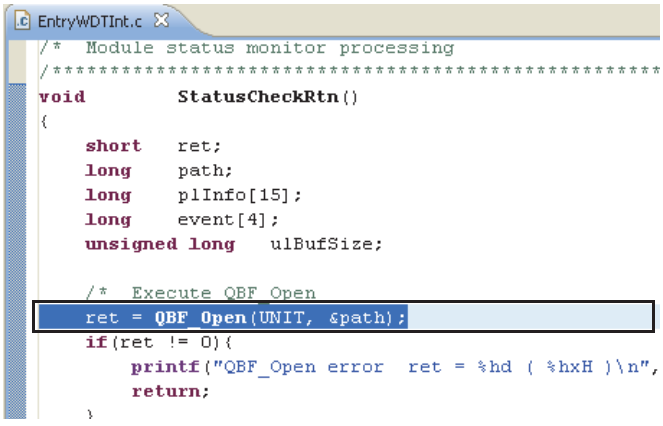


8. **Click the ( ) button to restart the task operation.**

How to see the status of the task operation

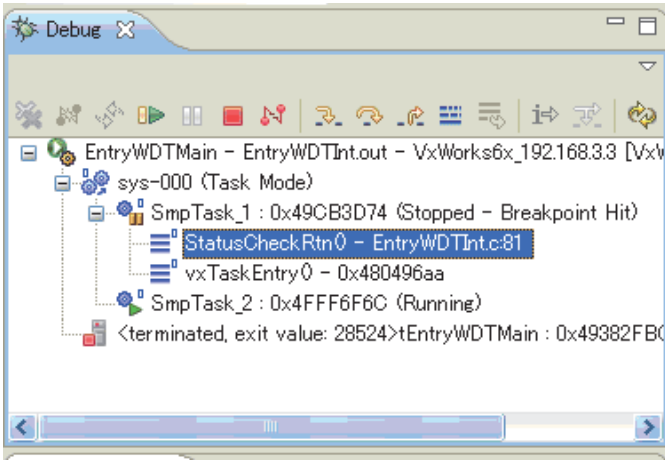
The following table lists how to see the status of the task operation based on enabled or disabled status of the three buttons: Resume ( ), Suspend ( ), and Terminate ( ).

Button status	Task operation status
No.1	Suspended status (during suspension) Click the button → turns to the status of No.2. Click the button → turns to the status of No.3.
No.2	Resume status (during execution) Click the button → turns to the status of No.1. Click the button → turns to the status of No.3.
No.3	Termination status (debugging terminated)



9. **The task operation goes into the Suspended status at the point where the breakpoint was inserted in the step 7, and the operation has stopped.**

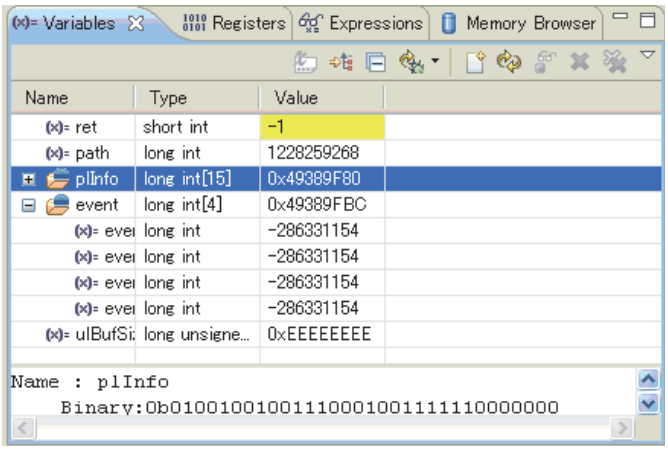
Continue debugging by operations such as checking variables with step through execution and changing variables.

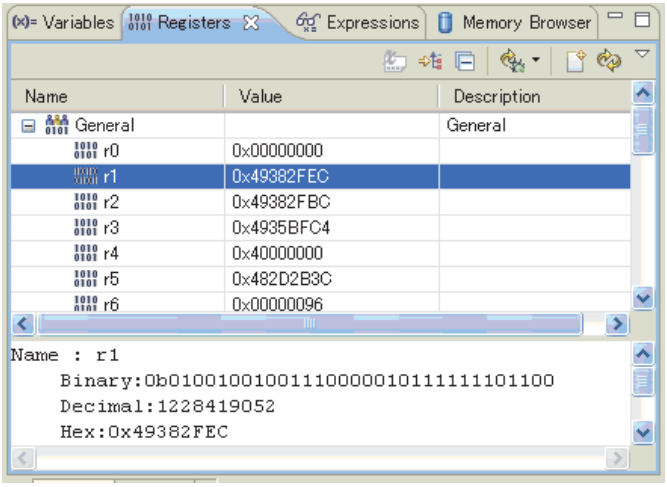


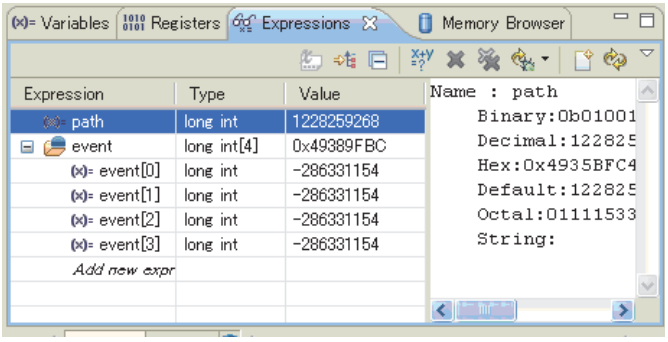
10. **Use the following step execution buttons on the tool button on the "Debug" window to continue debugging.**

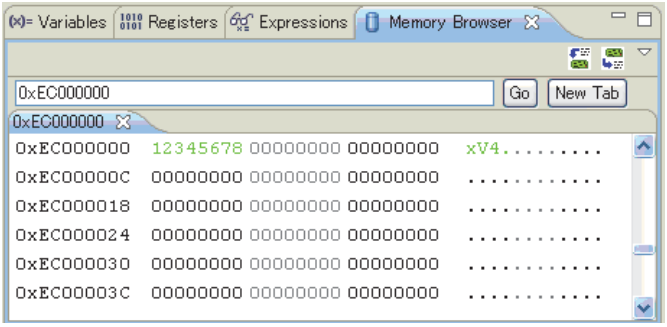
Icon	Description
	Step Into Steps into the called function and stops at the first line of the function.
	Step Over Executes the current line of the function and then stops at the next line of the function.
	Step Return Continues execution until the current function has returned to its caller.

To the next page









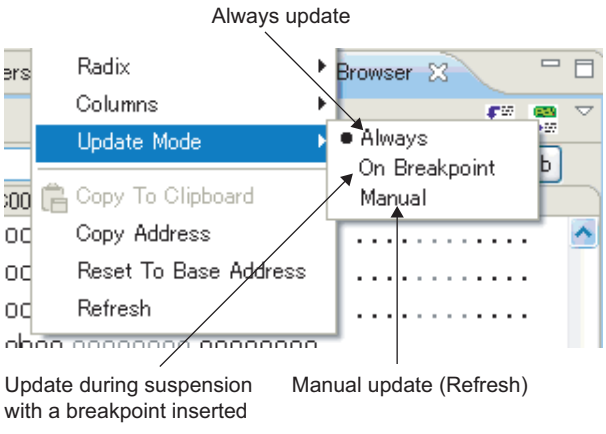
To the next page

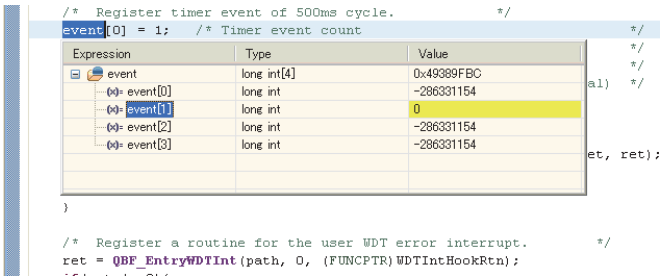
11. **Clicking the <<Variables>>, <<Registers>>,<<Expressions>>, and <<Memory Browser>> tabs during suspension of tasks displays each window. Checking and changing values allows efficient debugging.**

"Variables"
Displays the current values of local variables.
"Registers"
Displays the current values of registers.
"Expressions"
Displays the current values of variables in the Watches window.
"Memory Browser"
Displays the memory dumps on the C Controller module.

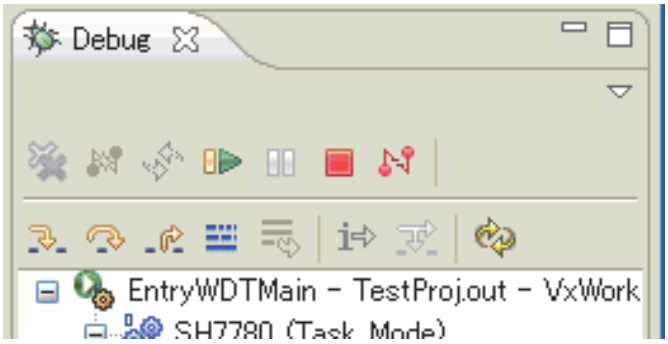
The color of cell changes to yellow when the value has changed from the previous value by step through execution or when the value has been changed.
On "Memory Browser", the color of cell does not change, but the color of font changes to green.

On "Memory Browser", timing to refresh values can be selected unlike other windows.
Right-click on the "Memory Browser" window. Select [Update Mode] from the pop up menu.





12. **Placing the mouse over a variable for a certain period of time displays the current value of the variable in a balloon.**
The value displayed in the balloon can be also changed like on the "Variables" window.

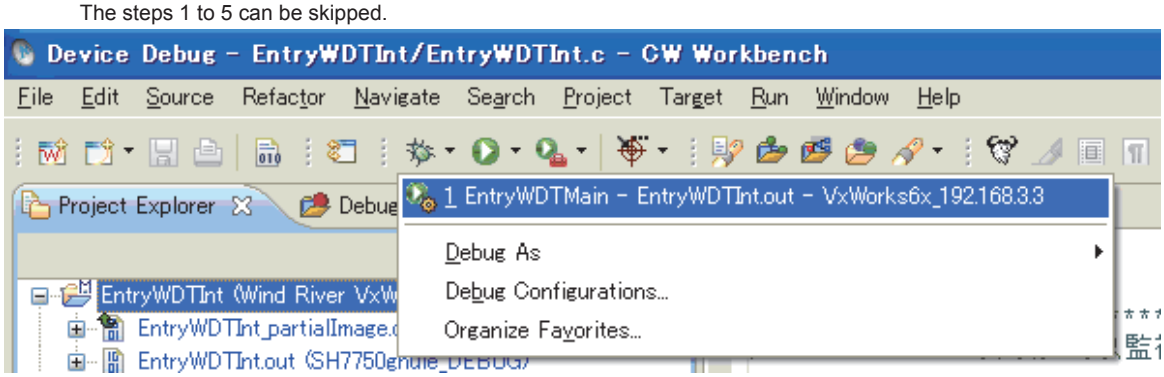


13. **Click the Terminate ( ) button on the "Debug" window to terminate the debugging session.**

Completed

Point

To debug the task again, click the ▼ mark on the right side of the debugging icon ( ) on the toolbar and select the created debug configurations at the top of the pop-up menu.
The steps 1 to 5 can be skipped.

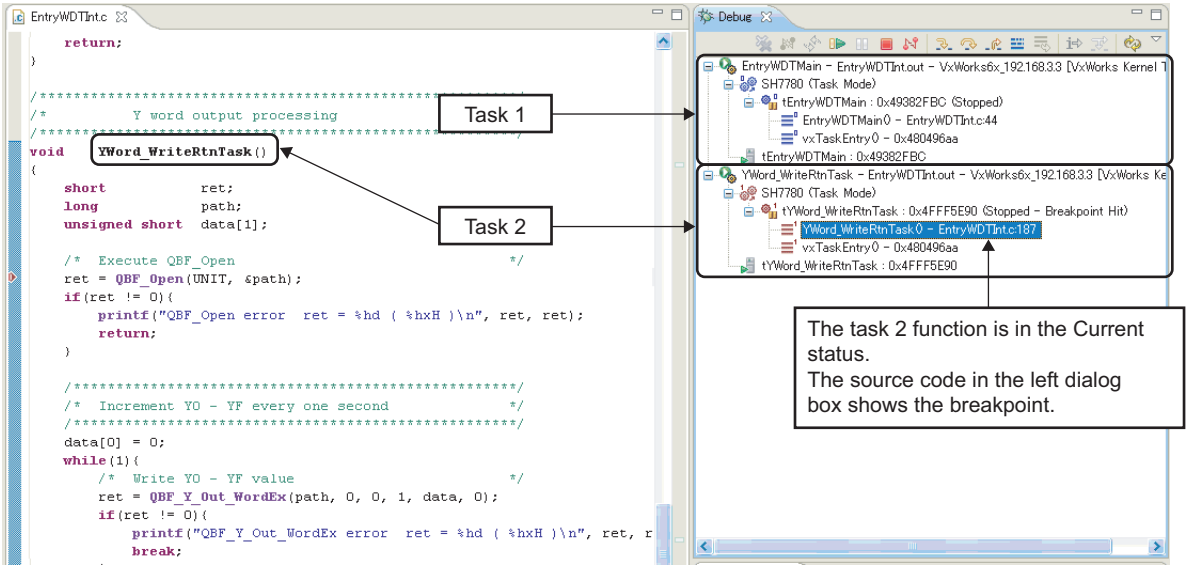


10.4.2 Debugging multiple tasks

(1) To debug multiple tasks, execute steps 1 to 5 in "Section 10.4.1. Debugging one task" as many times as the number of tasks to be started.

(2) The "Debug" window displays the executed tasks.

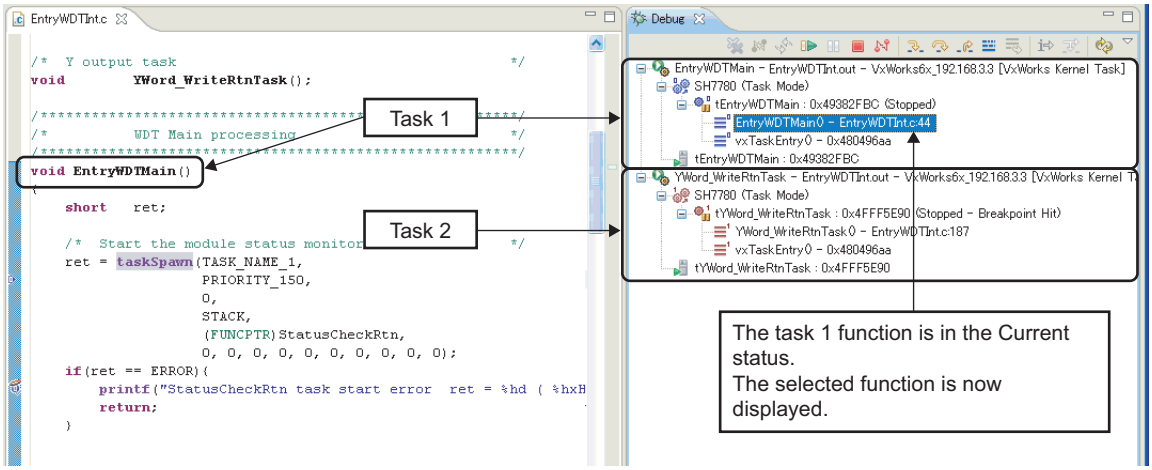
Ex. An example of when two tasks have been started


EntryWDTInt.c
Debug
Task 1
Task 2
The task 2 function is in the Current status.
The source code in the left dialog box shows the breakpoint.

(3) To debug another task, use the mouse to select another function on the "Debug" window.

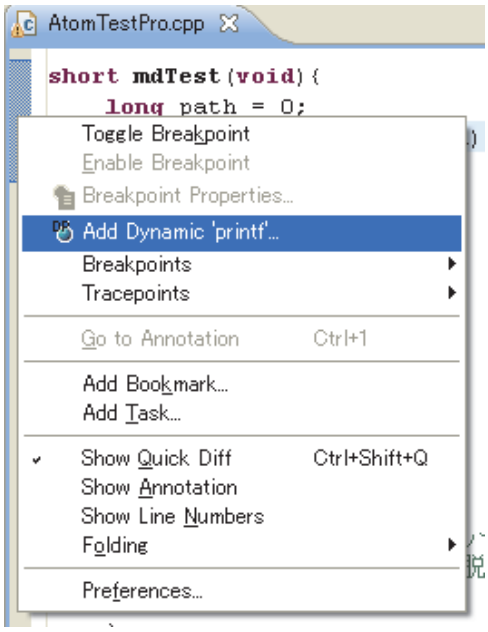
Switch tasks while multiple tasks are being debugged.

An example of when switching from the task 2 to task 1

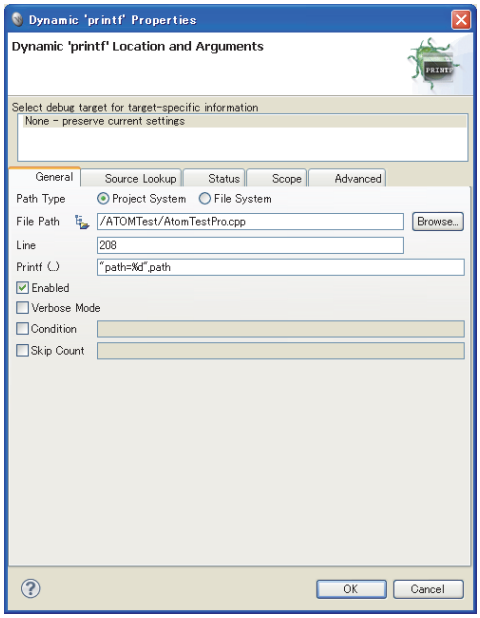


10.5 How to Execute Dynamic Printf

This section explains how to execute Dynamic Printf.
Dynamic Printf is a function to dynamically insert or cancel the printf statement when debugging the program without embedding the printf function to the source code with the similar operation as that of the breakpoint.
Dynamic Printf is only compatible with Q24DHCCPU-V/-VG.

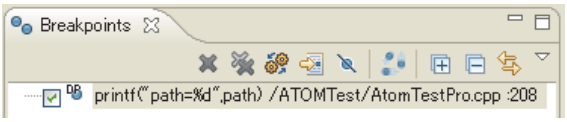


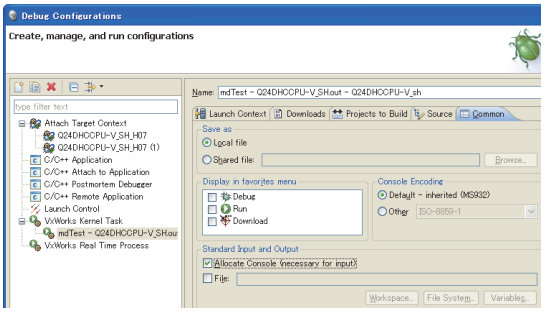
1. **On the "Editor" window, open the source file which is a target for debugging, and right-click the left edge section ( ) to open the pop-up menu.**
Select [Add Dynamic 'printf'...] from the pop-up menu.



2. **The "Dynamic 'printf' Properties" dialog box appears.**
Enter the printf statement to be displayed when debugging the program for "Printf (...)" with the same text format as the argument to be written in the printf function, and click the OK **button.**

To the next page





3. **The printf statement entered for "Printf (...)" is added on the "Breakpoints" window.**

The execution result is displayed on the "Console" window.

⇨To display the result of Dynamic Printf on the "Console" window, select "Allocate Console (necessary for input)" on the <<Common>> tab of the "Debug Configurations" dialog box.

CHAPTER 11 TROUBLESHOOTING

The following table lists errors that occur during use of CW Workbench and their solutions.

Category	Problem	Reference
Basic operation	The CW Workbench installer has stopped working half way through. Or the installer has terminated suddenly during installation.	Page 97, Section 11.1 (1)
	A message "The install root of your Wind River Workbench installation could not be located!" appears and CW Workbench cannot be started.	Page 97, Section 11.1 (2)
	A message "Workspace in use or cannot be created, choose a different one." appears and CW Workbench cannot be started.	Page 97, Section 11.1 (3)
	A patch has been applied, but the display does not change.	Page 98, Section 11.1 (4)
	The install menu of the plug-in software cannot be found.	Page 99, Section 11.1 (5)
License	You have received a permanent license file, but do not know how to use it.	Page 100, Section 11.2 (1)
	You do not know how to delete a permanent license file.	Page 100, Section 11.2 (2)
	An error message with a title of "License Not Found" appears when CW Workbench is started or being operated.	Page 100, Section 11.2 (3)
Building	An error "command not found" has occurred and the build is not executed.	Page 101, Section 11.3 (1)
	An error "no input files", "No Such file", or "No such file or directory" has occurred.	Page 102, Section 11.3 (2)
	An error "Build target "/yyyy/nnnn_partialImage" used in build target "yyyy" not found" has occurred and the build is not executed.	Page 102, Section 11.3 (3)
	The following build errors have occurred: "xxx.sh: syntax error near unexpected token `yyy_partialImage/Debug/Objects/nnn'" "xxx.sh: cannot execute binary file" "Makefile:xxx: *** missing separator. Stop" "yy.o: command not found **...** No such file or directory"	Page 103, Section 11.3 (4)
	.out file is not created. The build terminates with a message "Generation of makefiles started."	Page 103, Section 11.3 (5)
Target server connection	CW Workbench cannot be connected to the C Controller module.	Page 104, Section 11.4 (1)
	When "Connect" is executed on the "Remote Systems" window, an application error occurs and CW Workbench cannot be connected to the C Controller module.(Failed to Connect to Target) The connection status of the Remote Systems suddenly changes from "Connected" to "Disconnected".	Page 105, Section 11.4 (2)
	The selected target connections are not imported.	Page 105, Section 11.4 (3)
Downloading	.out file cannot be downloaded on the C Controller module.	Page 106, Section 11.5 (1)
	.out file sometimes cannot be downloaded on the C Controller module.	Page 106, Section 11.5 (2)
Installation using a temporary license	After an LAC code and user information are entered and the button is clicked, an error message appears and the installation does not progress.	Page 107, Section 11.6 (1)

11.1 Basic Operation

(1) The CW Workbench installer has stopped working half way through. Or the installer has terminated suddenly during installation.

This problem occurs when characters other than alphanumeric characters, an underscore "_", and a hyphen "-" have been used for the folder name of the installation location specified at first on the CW Workbench installer.

- Action

  Use the following characters for the folder name of the installation location and reinstall CW Workbench:
  - Alphanumeric characters
  - underscore "_", hyphen "-" (Space cannot be used)

(2) A message "The install root of your Wind River Workbench installation could not be located!" appears and CW Workbench cannot be started.

This problem occurs when characters other than alphanumeric characters, an underscore "_", and a hyphen "-" have been used for the folder name of the installation location on CW Workbench.

- Action

  Uninstall CW Workbench. Use the following characters for the folder name of the installation location and reinstall CW Workbench:
  - Alphanumeric characters
  - underscore "_", hyphen "-" (Space cannot be used)

(3) A message "Workspace in use or cannot be created, choose a different one." appears and CW Workbench cannot be started.

This message appears if the folder of the workspace specified at first is being accessed by another CW Workbench.

- Action

  Click the OK button. Select a different folder for the Workspace folder displayed again or terminate the CW Workbench that is operating already.

(4) A patch has been applied, but the display does not change.

Old data may be in the cache.

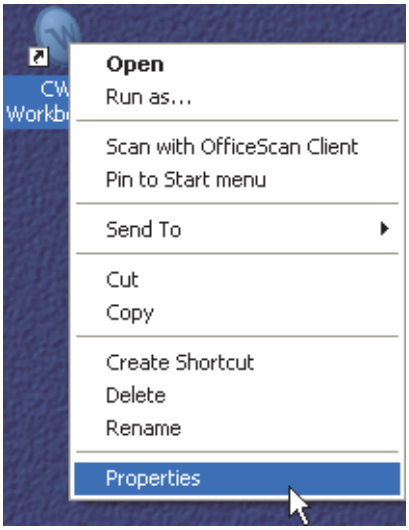
- Action

  When starting CW Workbench, specify "-clean" in the argument.

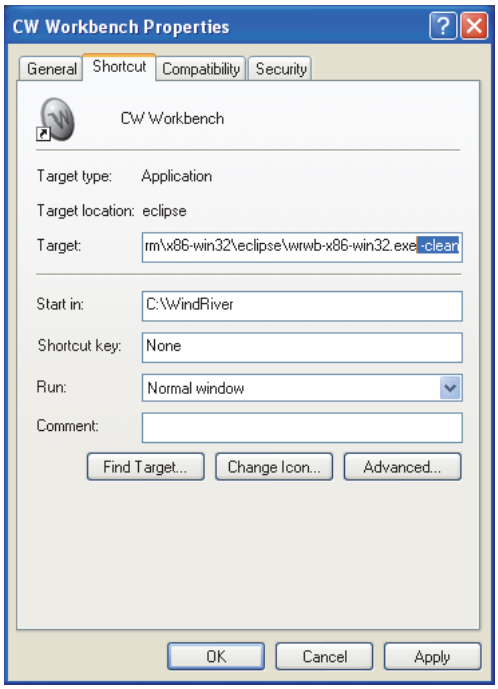
  After CW Workbench has been started with "-clean" specified, delete "-clean" from the boot argument.

  (Keeping "-clean" being specified slows the startup of CW Workbench.)

(a) How to specify "-clean"



1. **Select the CW Workbench shortcut on the desktop. In the menu that pops up by right-clicking on the shortcut, select [Properties].**



2. **Enter a space at the end of "Target:" on the CW Workbench Properties. Enter "-clean" after the space and click the** OK **button.**

(b) How to delete "-clean"

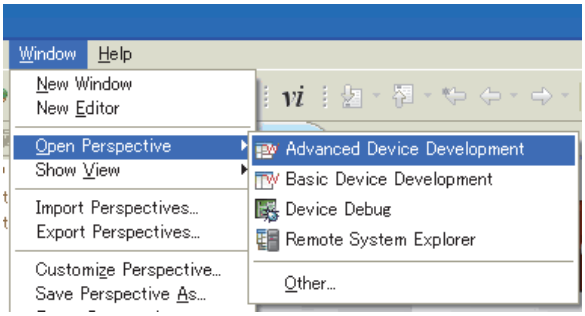
In the step 2 of [How to specify "-clean"], delete the space and "-clean". Click the OK button.

(5) The install menu of the plug-in software cannot be found.

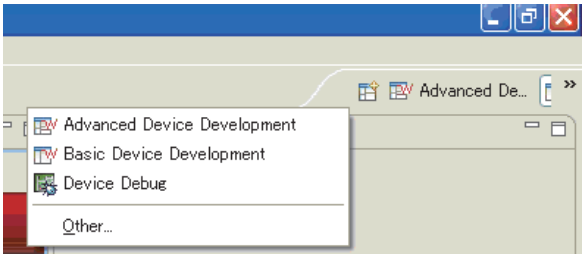
To install the plug-in software, select from the menu bar [Help]⇨[Install New Software...].
If [Install New Software...] cannot be found on the Help menu, the display mode of CW Workbench is "Basic Device Development".
Check the current display mode of CW Workbench on the title bar.

- Action
  Change the display mode of CW Workbench to "Advanced Device Development".

(a) How to change the display mode

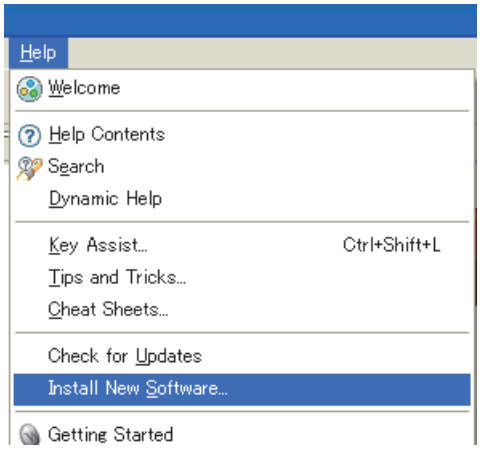


1. Select from the menu bar [Window] ⇨ [Open Perspective] ⇨ [Advanced Device Development].



Another way to change the display mode is click the Open Perspective icon ( ) at the upper right corner of CW Workbench and select "Advanced Device Development" from the menu displayed.

2. **Check that the title display of CW Workbench has been changed to "Advanced Device Development".**



3. **To install the plug-in software, select from the menu bar [Help]⇨[Install New Software...].**

11.2 License

(1) You have received a permanent license file, but do not know how to use it.

Store the obtained permanent license file in the license folder in the personal computer where CW Workbench has been installed.

☞ Page 25, Section 5.3

(2) You do not know how to delete a permanent license file.

Delete all the files in the license folder in the personal computer where CW Workbench has been installed.

☞ Page 26, Section 5.4

(3) An error message "License Not Found" appears when CW Workbench is started or being operated.

An error has occurred with the license file being used for CW Workbench.

☞ Page 112, Appendix 2

11.3 Building

(1) An error "command not found" has occurred and the build is not executed.

A compiler that cannot be used on CW Workbench has been selected.

- Action

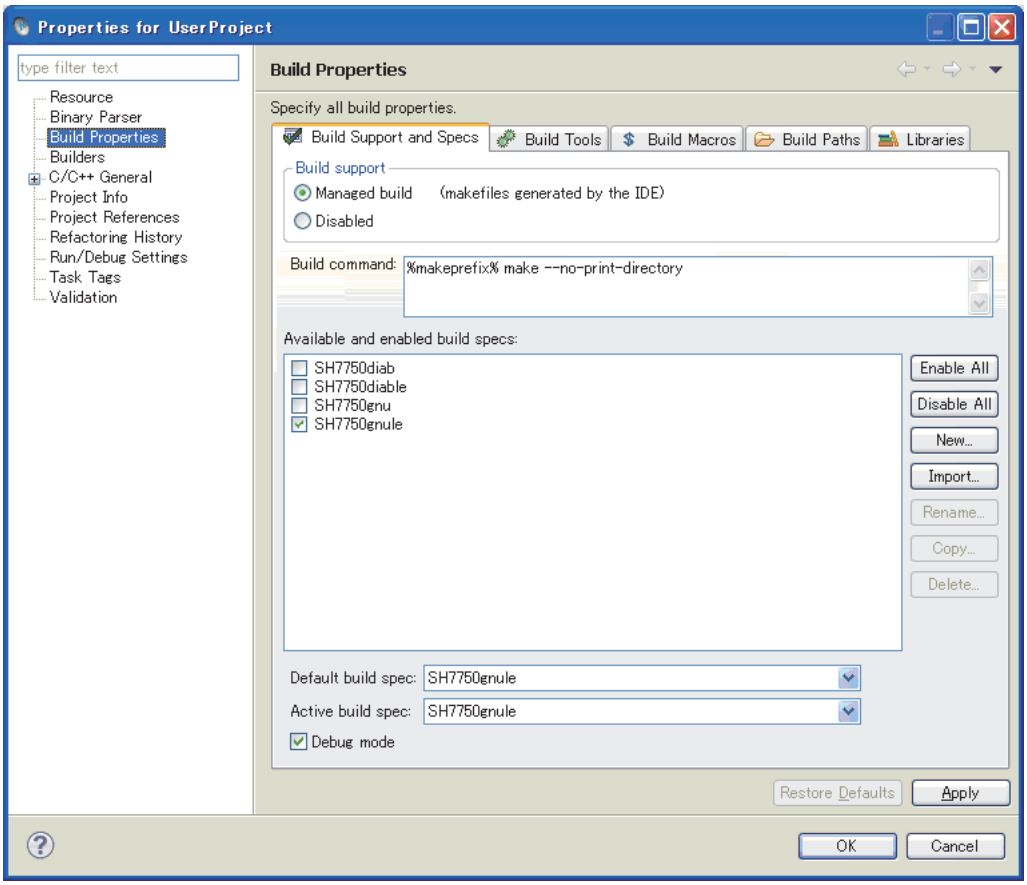
  From the tree view to the left on the "Properties" window on the "Project" menu, select "Build Properties" and click the<<Build Support and Specs>>tab. (The window shown below is the one that appears when the project name is "UserProject".)

  Check that the compilers that cannot be used have not been selected for "Available and enabled build specs:".

  Since the "Available and enabled build specs:" supports only the following build specifications, clear the check boxes other than the following build specifications.

  ⇨ For Q24DHCCPU-V/-VG: "PENTIUM4gnu"

  ⇨ For Q12DCCPU-V: "SH7750gnule"



(2) An error "no input files", "No Such file", or "No such file or directory" has occurred.

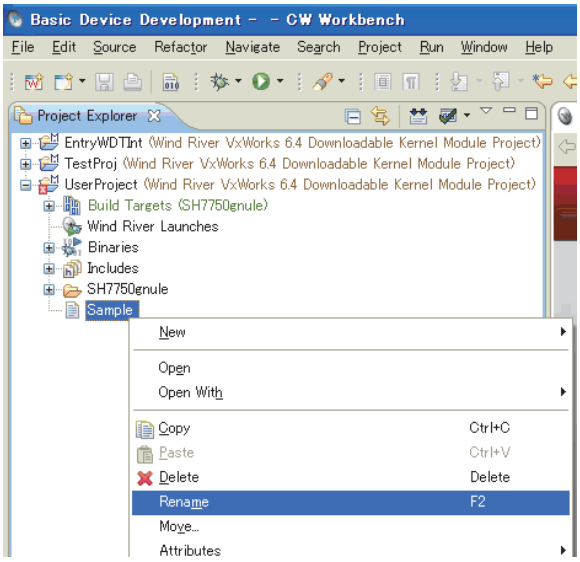
The source file may not have been registered in the build project.

- Action

  Create a file with extension of ".c" or ".cpp" or change the file name to the one with extension of ".c" or ".cpp". Register the file in the build project and execute the build.

  ☞ Page 55, CHAPTER 8

  Follow the instruction below to change the file name.



- With "Sample" selected, select [Rename] from the menu that pops up by right-clicking.
- Select "Sample" and press the F2 key.

(3) An error "Build target "/yyyy/nnnn_partialImage" used in build target "yyyy" not found" has occurred and the build is not executed.

The file with the same name as the project name may have been renamed.

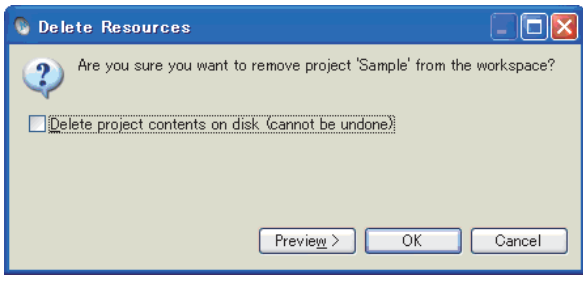
- Action

  Create a project and move the source file from the project where an error occurs.

  ☞ Page 55, CHAPTER 8

Point

The following message appears when the project where an error occurs is deleted. Check if the box is selected or cleared. Do not delete the necessary file by mistake.


Delete Resources
Are you sure you want to remove project 'Sample' from the workspace?
Delete project contents on disk (cannot be undone)
Preview >
OK
Cancel

Clicking the OK button with the box cleared (☐) deletes the project from the workspace. The file remains on the hard disk.

Clicking the OK button with the box selected (☑) deletes the project from the workspace. The file is deleted from the hard disk at the same time. (The deleted file cannot be recovered.)

(4) The following errors occur:

"xxx.sh: syntax error near unexpected token `yyy_partialImage/Debug/Objects/nnn'"

"xxx.sh: cannot execute binary file"

"Makefile:xxx: *** missing separator. Stop"

"yy.o: command not found...No such file or directory"

The source file name may have symbolic-characters.

- Action

  Remove the following symbols and characters that cannot be used from the file name with an error message nnn and from the name of the source file added to the project.

Symbols/characters that cause a build error	
#	Sharp sign
&	Ampersand
'	Apostrophe
(	Parenthesis
)	Parenthesis
;	Semicolon
=	Equality sign
`	Grave accent
Two-byte characters	
Katakana	

The following symbols that cannot be used for file names on Windows also cannot be used for the source file.

Symbols that cannot be used for file names on Windows©	
\	Backslash
/	Slash
:	Colon
*	Asterisk
?	Question mark
"	Quote
<	Less than
>	Greater than
|	Pipe

(5) .out file is not created.

The build terminates with a message "Generation of makefiles started."

The source file name may have a dollar sign "$".

- Action

  Remove "$" from the source file name.

11.4 Target Server Connection

(1) CW Workbench cannot be connected to the C Controller module.

(a) Case 1: [Log Console] A message "Differences for module "xxxxxxx" segment's address" appears.

The VxWorks image file of the C Controller module is not the same as that of CW Workbench.

- Action

  The VxWorks image file of the C Controller module must be the same as that of CW Workbench.

  ☞Page 75, Section 9.1

(b) Case 2: A message [Failed to Connect to Target] appears.

The C Controller module may not be connected to the CW Workbench network or the IP address setting may be wrong.

- Action

  Check the following items:

  - The C Controller module is on.
  - The C Controller module is properly operating. (There is no error.)
  - The LAN cable connector connecting the development environment (personal computer) to the C Controller module has been fully inserted into the LAN socket.
  - LEDs of all the LAN ports to which LAN cables are connected are lit.
  - IP addresses of the development environment (personal computer) and the C Controller module have been set properly.

Point

If the problem is not solved by applying the corrective actions shown above, delete the cache folder and restart CW Workbench. (It may take time to startup at the first time after deleting the cache folder.)

- Cache folder

  "C:\Documents and Settings\User name\.workbench-3.2.x.xxxxxxxx-xxxx"

  User name: The user name currently logged on

  x: A value added automatically

(c) Other causes

The host name of the development environment (personal computer) where CW Workbench has been installed may have only one character or more than 15 characters or may have two-byte characters or one-byte katakana.

- Action

  Set the host name of the development environment (personal computer) within 2 to 15 alphanumeric characters.

(2) When "Connect" is executed on the "Remote Systems" window, an error occurs and CW Workbench fails to be connected to the C Controller module.(Failed to Connect to Target)
The connection status of the Remote Systems suddenly changes from "Connected" to "Disconnected".

This error occurs when: "Connect" has been executed on the "Remote Systems" window of CW Workbench on multiple personal computers for one C Controller module, or "Connect" has been executed on the "Remote Systems" window of CW Workbench multiple times on one personal computer for one C Controller module.

- Action
  Do not execute "Connect" on multiple personal computers to one C Controller module at the same time.
  Do not execute "Connect" on the Remote Systems window of CW Workbench multiple times to one C Controller module.

(3) The selected target connections are not imported.

This error occurs when: the multiple target connections are selected, and the import operation is executed.

- Action
  Import the target connections one by one which are not imported.

11.5 Downloading

(1) .out file cannot be downloaded on the C Controller module.

[Problem Occurred] message

Possible Cause:

Download failed.

The path or the file name of the .out file to be downloaded has characters or symbols that cannot be used.

- Action

  Remove the following symbols and characters from the path or the file name of the .out file to be downloaded. Select the file again and download it.

Downloading fails if an .out file has the following symbols/characters for the path and the file name:	
'	Apostrophe
*	Asterisk
:	Colon
;	Semicolon
.	Period
<	Less than
>	Greater than
/	Slash
?	Question mark
Space	
Two-byte characters	
Katakana	

(2) .out file sometimes cannot be downloaded on the C Controller module.

The path of the VxWorks image file selected for the target server setting may have two-byte characters or katakana.

- Action

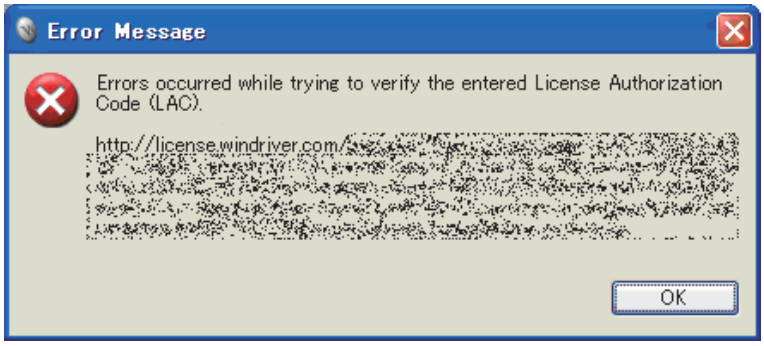
  Remove two-byte characters and katakana from the path of the VxWorks image file.

  ☞ Page 75, Section 9.1

11.6 Installation using a temporary license

(1) After an LAC code and user information are entered and the Next > button is clicked, an error message appears and the installation does not progress.

Error message


Error Message
Errors occurred while trying to verify the entered License Authorization Code (LAC).
http://license.windriver.com/
OK

• Action

The following table describes how to respond to the error text displayed in the "Error Message" dialog box.

Error text	Action
HTTP Server: Bad Gateway	The HTTP server you are trying to access may not be responding properly. Try to install the product later. If the problem still remains, try to install the product another day.
Unknown Host:	The personal computer in use may be connected to the Internet via a proxy server. Use the < Back button and go back to the "Installer-Online Update Settings" window. Check the box of "Connect to internet using proxy server" and configure the proxy server setting.
Unable to read repository at	The personal computer in use may not be connected to the Internet. Check that the personal computer can be connected to the Internet. Install the product on the personal computer being connected to the Internet. When the personal computer is connected via a proxy server, conduct the measure of the error text (Unknown Host) above.

APPENDIX

Appendix 1 Installation and Uninstallation of the Plug-in Software

This section explains how to install and uninstall the plug-in software, an extended function of the product.

Remark

For details on the plug-in software functions, refer to the following Wind River Workbench document provided by Wind River Systems, Inc.

Click the menu bar [Help] ⇨ [Help Contents] ⇨ "Wind River Partners Documentation" → "Eclipse Workbench User Guide" → "Tasks" → "Updating and installing software"

Appendix 1.1 Installation

Follow the instructions below to install the plug-in software.

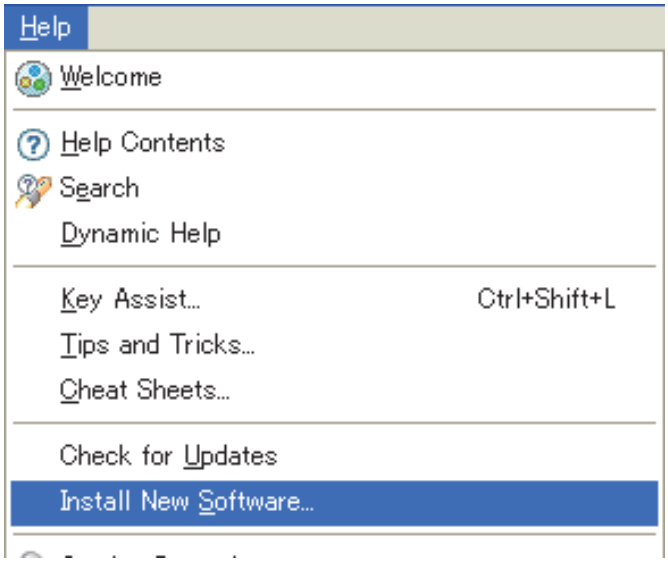
Point

- When installing the plug-in software, check that the product is in the "Advanced Device Development" mode.

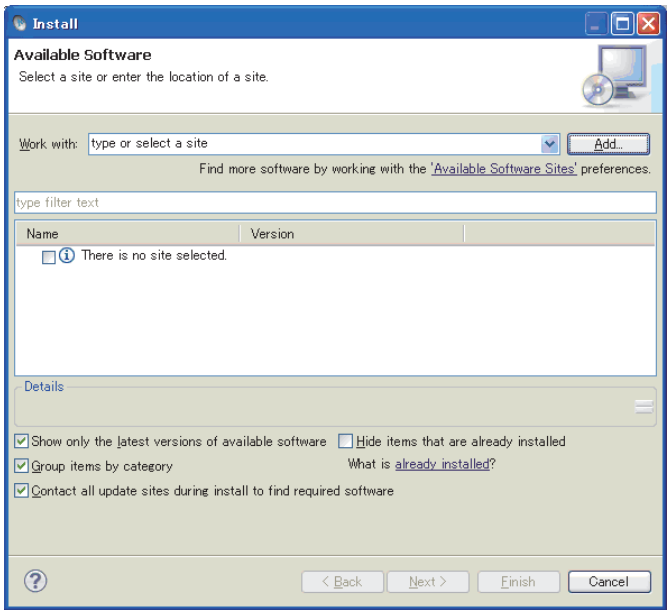
If "Basic Device Development" is displayed on the title bar, change it to "Advanced Device Development" by one of the following methods:

- Select from the menu bar [Window] ⇨ [Open Perspective] ⇨ [Advanced Device Development].
- From the menu that appears by clicking the Open Perspective icon ( ) at the upper right corner, select [Advanced Device Development].

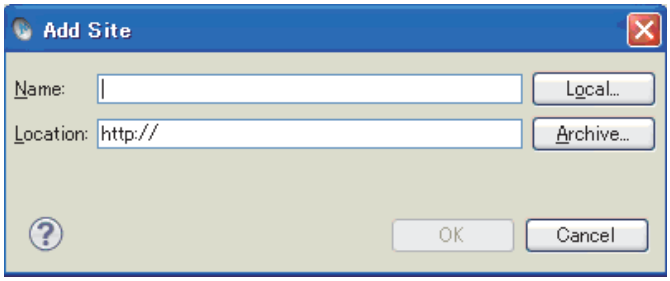
- The plug-in software install method explained in this chapter is the same as the general install method of Eclipse3.5. To install the plug-in software, follow instructions provided by plug-in software manufactures.
- For details on how to use the plug-in software installed, contact the plug-in software manufacturer.
- If the installed plug-in software does not properly operate, check if the software can be operated in Eclipse3.5 on public operating environment provided by the plug-in software manufacturer.



1. **To install the plug-in software, click the menu bar [Help] ⇨ [Install New Software...].**


Install
Available Software
Select a site or enter the location of a site.
Work with: type or select a site
Add...
Find more software by working with the 'Available Software Sites' preferences.
type filter text
Name
Version
There is no site selected.
Details
Show only the latest versions of available software
Hide items that are already installed
Group items by category
What is already installed?
Contact all update sites during install to find required software
< Back
Next >
Finish
Cancel

2. **Click the Add... button on the Install window.**

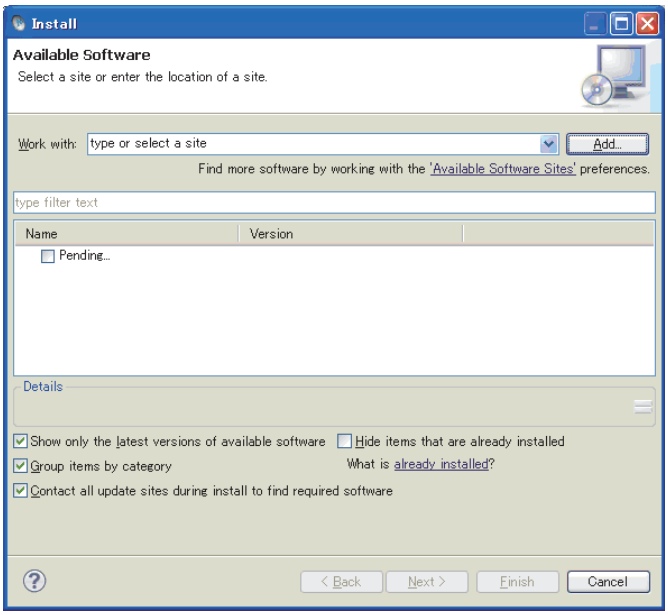


3. **Enter information for the Name and Location fields. Click the OK button. A web site where the plug-in is software installed is added.**

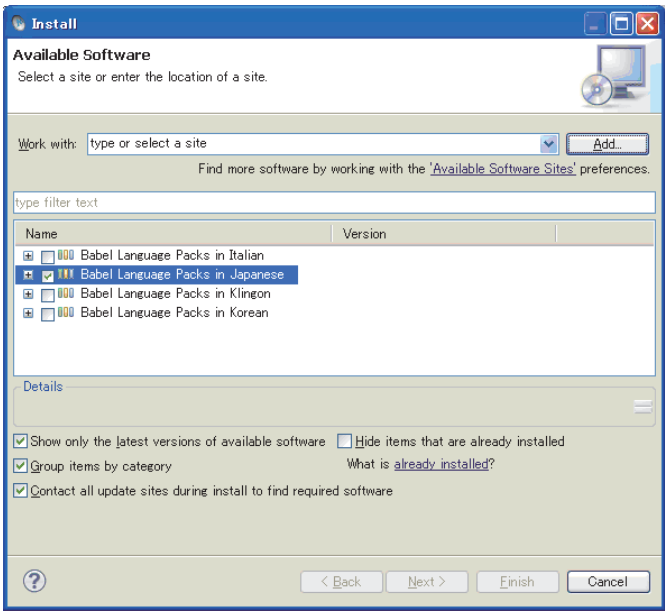
Remark

An Archive file downloaded from the web site can be also selected for the "Location" field by clicking the Archive... button.

To the next page



4. **Package that can be installed from the added Location is acquired.**
"Pending..." is displayed as shown on the window to the left while the information is being acquired.


Install
Available Software
Select a site or enter the location of a site.
Work with:
type or select a site
Add...
Find more software by working with the 'Available Software Sites' preferences.
type filter text
Name
Version
Babel Language Packs in Italian
Babel Language Packs in Japanese
Babel Language Packs in Klingon
Babel Language Packs in Korean
Details
Show only the latest versions of available software
Hide items that are already installed
Group items by category
What is already installed?
Contact all update sites during install to find required software
< Back
Next >
Finish
Cancel

5. **When the package that can be installed has been acquired, package names are displayed.**
Select a package to be installed.
Click the Next > **button to install the plug-in software.**

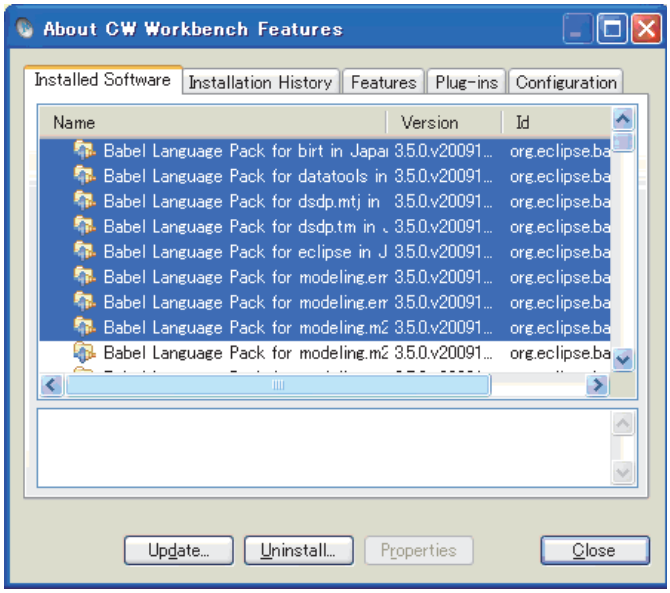
Completed

Appendix 1.2 Uninstallation

Follow the instructions below to uninstall the plug-in software.

1. **Select the menu bar [Help] ⇨ [About CW Workbench Features].**

Click the Installation Details button.



2. **Open the <<Installed Software>> tab and select the packages to be deleted.**

Click the Uninstall... button to uninstall the plug-in software.

Completed

Appendix 2 License Errors

This section explains license errors that may occur when CW Workbench is started and being used.

Appendix 2.1 License errors

CW Workbench operates as below when a license error occurs at start-up and during use.

(1) Click the Retry button on the License Not Found dialog box.

- The license is repeatedly checked.

(2) Click the Cancel button on the "License Not Found" dialog box.

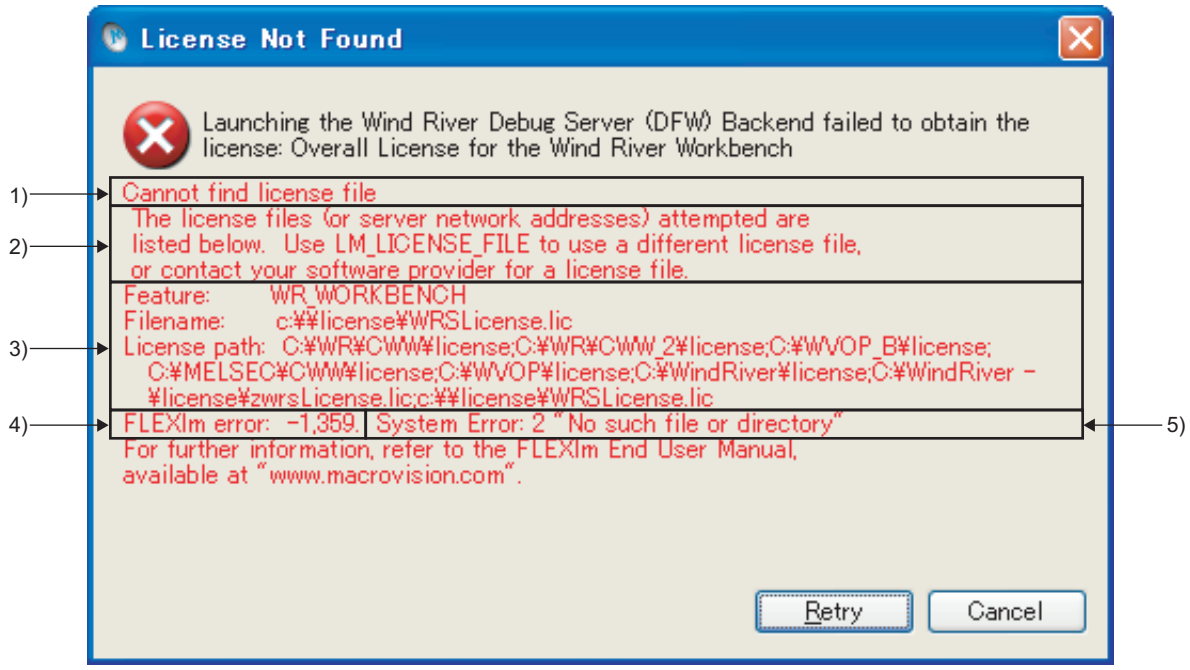
- The license check ends and CW Workbench continues to operate.

  If the Cancel button is clicked with license errors occurred and CW Workbench continues to operate, CW Workbench operates with the following functions disabled:

Functions that cannot be used when a license error occurs	Functions that can be used even when a license error occurs
• Project creation • Building • Target server connection • Downloading • Debugging	• Editor function (such as new creation, editing, saving, and searching) • Importing • Exporting

Appendix 2.2 License error message

When a license error occurs, an error message "License Not Found" shown below appears. Check error details based on an error number.


License Not Found
Launching the Wind River Debug Server (DFW) Backend failed to obtain the license: Overall License for the Wind River Workbench
1)
Cannot find license file
2)
The license files (or server network addresses) attempted are listed below. Use LM_LICENSE_FILE to use a different license file, or contact your software provider for a license file.
3)
Feature: WR_WORKBENCH
Filename: c:¥¥license¥WRSLicense.lic
License path: C:¥WR¥CWW¥license;C:¥WR¥CWW_2¥license;C:¥WVOP_B¥license; C:¥MELSEC¥CWW¥license;C:¥WVOP¥license;C:¥WindRiver¥license;C:¥WindRiver -¥license¥zwrsLicense.lic;c:¥¥license¥WRSLicense.lic
4)
FLEXlm error: -1,359. System Error: 2 "No such file or directory"
5)
For further information, refer to the FLEXlm End User Manual, available at "www.macrovision.com".
Retry
Cancel

No.	Item	Description
1)	Error text	Displays an error outline within 80 characters.
2)	Error details*1	Displays error details and solutions/measures within 3 to 5 lines.
3)	Support information*1	Information such as a license file name and path information
4)	FLEXlm error information	Displays the error number and minor number of a license error case.(A number used when an FLEXlm vendor provides support. This guidebook omits explanations.) • FLEXlm error: □ , △ □ : Error number (-1 to negative number) △ : Minor number (1 to positive number) In the error message above (FLEXlm error: -1,359) Error number: -1 Minor number: 359
5)	System error information*1	Indicates the latest error number and error text of the operating system acquired before a license error.

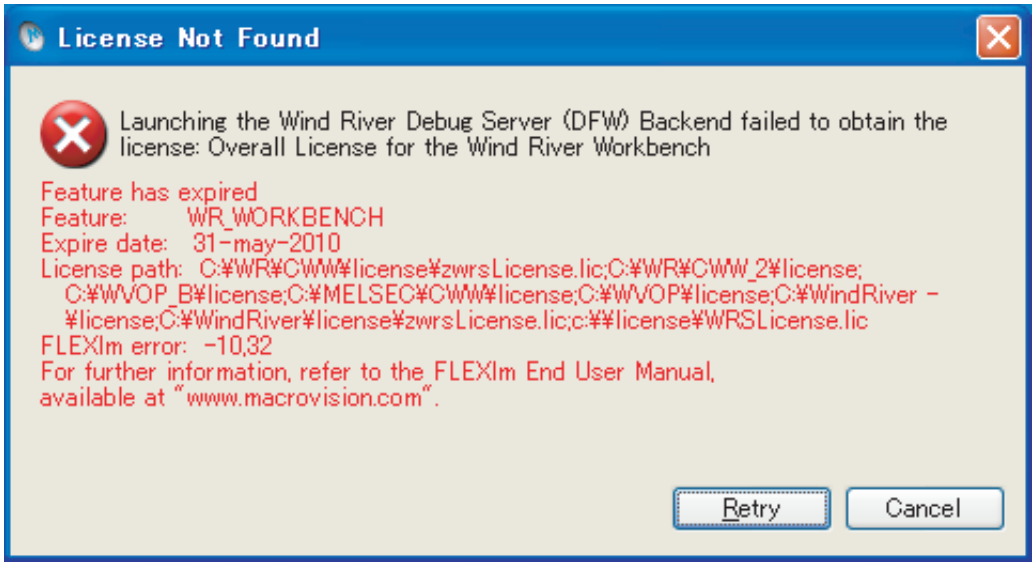
*1 These items are not displayed for the specific errors.

Appendix 2.3 Main license error messages and recovery procedures

This section explains license errors that may occur during operations of CW Workbench and how to recover from errors.

(1) Trial period expiration

If CW Workbench is used with a temporary license, the following license error message appears after 31 days since installation.


License Not Found
Launching the Wind River Debug Server (DFW) Backend failed to obtain the license: Overall License for the Wind River Workbench
Feature has expired
Feature: WR_WORKBENCH
Expire date: 31-may-2010
License path: C:¥WR¥CWW¥license¥zwrsLicense.lic;C:¥WR¥CWW_2¥license;
C:¥WVOP_B¥license;C:¥MELSEC¥CWW¥license;C:¥WVOP¥license;C:¥WindRiver -
¥license;C:¥WindRiver¥license¥zwrsLicense.lic;c:¥¥license¥WRSLicense.lic
FLEXlm error: -10,32
For further information, refer to the FLEXlm End User Manual,
available at "www.macrovision.com".
Retry
Cancel

(a) How to recover from the error

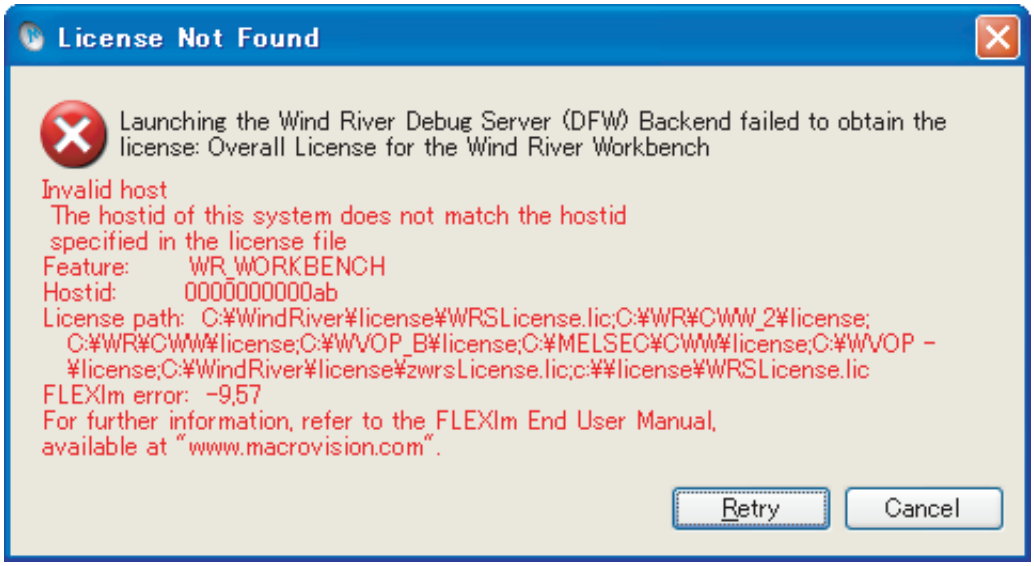
Acquire a permanent license and overwrite the file to use CW Workbench.

(2) Use of an illegal license

If there is an error in host information to be registered when a permanent license is acquired, the following license error message appears.

Point

When "DISK" is selected and a DISK serial number other than the one on the C drive is specified on the Permanent License Application Form, the same error occurs.
Enter a DISK serial number on the C drive for the Host ID.
When there are multiple drives on the development environment (personal computer) in use, do not enter a DISK serial number other than the one on the C drive for the Host ID.


License Not Found
Launching the Wind River Debug Server (DFW) Backend failed to obtain the license: Overall License for the Wind River Workbench
Invalid host
The hostid of this system does not match the hostid specified in the license file
Feature: WR_WORKBENCH
Hostid: 0000000000ab
License path: C:¥WindRiver¥license¥WRSLicense.lic;C:¥WR¥CWW_2¥license;C:¥WR¥CWW¥license;C:¥WVOP_B¥license;C:¥MELSEC¥CWW¥license;C:¥WVOP¥license;C:¥WindRiver¥license¥zwrsLicense.lic;c:¥¥license¥WRSLicense.lic
FLEXlm error: -9,57
For further information, refer to the FLEXlm End User Manual, available at "www.macrovision.com".
Retry
Cancel

(a) How to recover from the error

Recheck the Host ID of the personal computer where CW Workbench is being used.

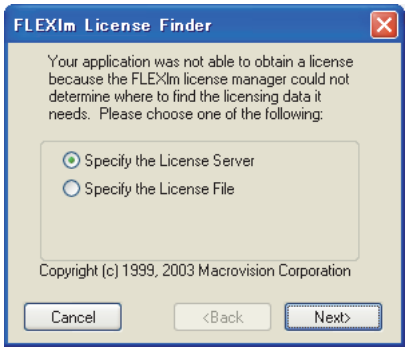
- If the Host ID is wrong:
  Apply for license transfer using License Transfer Certification Agreement Form in PermanentLicenseApplicationForm.xls stored in the DVD-ROM. The Host ID to enter here is as follows:
  Enter the wrong Host ID registered last time for "Previous License".
  Enter a new Host ID to be registered this time for "New License".
- If the Host ID is correct:
  Contact your local Mitsubishi service center or representative.

(3) Use of a file without license

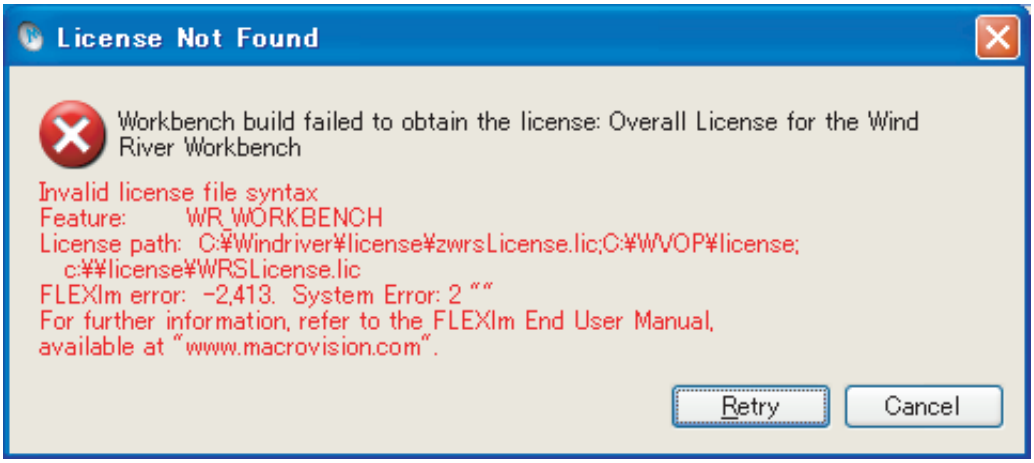
When CW Workbench has been installed using an install key, the following dialog box appears at the startup of CW Workbench.

Click the Cancel button to start CW Workbench. After the startup, the following license error message appears.

- Dialog box


FLEXlm License Finder
Your application was not able to obtain a license because the FLEXlm license manager could not determine where to find the licensing data it needs. Please choose one of the following:
Specify the License Server
Specify the License File
Copyright (c) 1999, 2003 Macrovision Corporation
Cancel
<Back
Next>

- License error message


License Not Found
Workbench build failed to obtain the license: Overall License for the Wind River Workbench
Invalid license file syntax
Feature: WR_WORKBENCH
License path: C:¥Windriver¥license¥zwrsLicense.lic;C:¥WVOP¥license;
c:¥¥license¥WRSLicense.lic
FLEXlm error: -2,413. System Error: 2 ""
For further information, refer to the FLEXlm End User Manual,
available at "www.macrovision.com".
Retry
Cancel

(a) How to recover from the error

Apply for a permanent license. After acquiring a permanent license file, apply it to the development environment (personal computer).

Appendix 3 Comparison with Wind River Workbench

The following table shows the comparison between this product (SW1DND-CWWLQ12-E, SW1DND-CWWLQ24-E) and Wind River Workbench.

Appendix 3.1 Comparison with SW1DND-CWWLQ12-E

○: Applicable, ×: Not applicable

Item		CW Workbench (SW1DND-CWWLQ12-E)	Wind River Workbench 2.6.1
Operating system	Microsoft® Windows®7 Professional Operating System	○	×
	Microsoft® Windows®7 Enterprise Operating System		
	Microsoft® Windows®7 Ultimate Operating System		
	Microsoft® Windows Vista® Business Operating System		
	Microsoft® Windows Vista® Ultimate Operating System		
	Microsoft® Windows Vista® Enterprise Operating System		
	Microsoft® Windows® XP Professional Operating System Service Pack3 or later	○	○
Framework	Eclipse (Workbench basic function)	Ver.3.5	Ver.3.2
Compiler	SH7750gnule (Compiler for C Controller module (GCC for SH-4A Little Endian compiler)	○	○
	SIMNTgnu (Compiler for VxSim) (GCC for VxWorks Simulator Windows compiler))	×	○
Project system and build system (Project creation and management)	VxWorks Downloadable Kernel Module Project (A project used for normal application development. Applications which are executed in the kernel mode of VxWorks 6.x are created)	○	○
Debugger	Wind River VxWorks Simulator (A simulation function to execute debugging by running the Wind River VxWorks application on the operating system without the actual devices)	×	○
Runtime analysis tool	MemScope (Specify memory leaks by monitoring the memory usage.)	×	○
	ProfileScope (Analyze bottleneck of tasks by conducting statistical analysis on coding status.)		
	StethoScope (Analyze memory leaks by monitoring variables and data structures in real time.)		
	System Viewer (Analyze deadlock and task execution order by monitoring interrupt task status, CPU utilization, etc.)		

Appendix 3.2 Comparison with SW1DND-CWWLQ24-E

○: Applicable, ×: Not applicable

Item		CW Workbench (SW1DND-CWWLQ24-E)	Wind River Workbench 3.2
Operating system	Microsoft® Windows®7 Professional Operating System	○	○
	Microsoft® Windows®7 Enterprise Operating System		
	Microsoft® Windows®7 Ultimate Operating System		
	Microsoft® Windows Vista® Business Operating System		
	Microsoft® Windows Vista® Ultimate Operating System		
	Microsoft® Windows Vista® Enterprise Operating System		
	Microsoft® Windows® XP Professional Operating System Service Pack3 or later		
Framework	Eclipse (Workbench basic function)	Ver.3.5	Ver.3.5
Compiler	PENTIUM4gnu (Compiler for C Controller module (GCC for Intel Atom Z5xx compiler))	○	○
	SIMNTgnu (Compiler for VxSim (GCC for VxWorks Simulator Windows compiler))	×	○
Debugger	Wind River VxWorks Simulator (A simulation function to execute debugging by running the Wind River VxWorks application on the operating system without the actual devices)	×	○
	Dynamic Printf (A function to dynamically insert or cancel the printf statement when debugging the program without embedding the printf function to the source code with the similar operation as that of the breakpoint)	○	○
Runtime analysis tool	MemScope (Specify memory leaks by monitoring the memory usage.)	×	○
	ProfileScope (Analyze bottleneck of tasks by conducting statistical analysis on coding status.)		
	StethoScope (Analyze memory leaks by monitoring variables and data structures in real time.)		
	System Viewer (Analyze deadlock and task execution order by monitoring interrupt task status, CPU utilization, etc.)		

Appendix 4 Support

Appendix 4.1 Technical support assistance service regarding C Controller module

For technical support assistance service regarding C Controller module, refer to the table below.
If you are not sure which type the inquiry belongs to, please contact us. Please note that inquiries other than MELSEC-related inquiries may not be able to be answered.

Type	Inquiry	Where to contact
MELSEC-related	• Functions and specifications of C Controller module • Specifications and usage of the dedicated function library provided by Mitsubishi Electric Corporation • Setting/monitoring tools for the C Controller module, and functions and specifications of CW Workbench • Functions and specifications of the Mitsubishi products to be used with C Controller module (such as units and MELSOFT)	☞Information and services For further information and services, please consult your local Mitsubishi representative
Operating system-related	• Functions and specifications of VxWorks, API functions provided by VxWorks, and general inquiries regarding programming related to VxWorks • Functions and specifications of Wind River Workbench and Tornado	Wind River Systems, Inc. URL: http://www.windriver.com
Plug-in software-related	• Inquiries regarding the plug-in software to be used with CW Workbench or Wind River Workbench	Plug-in software manufacturer

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REVISIONS

*The manual number is given on the bottom left of the back cover.

Print date	*Manual number	Revision
Jan., 2011	SH(NA)-080982ENG-A	First edition
Dec., 2012	SH(NA)-080982ENG-B	Correction MANUAL PAGE ORGANIZATION, GENERIC TERMS AND ABBREVIATION, TERMS, Section 2.1, Section 2.2, Section 2.3, Section 2.4, Section 3.1, Section 3.2, Section 5.1, Section 6.1.1, Section 6.1.2, Section 6.1.3, Section 6.2.1, Section 6.2.2, Chapter 7, Section 8.1, Section 8.3, Section 9.1.1, Section 9.1.2, Section 11.3 Addition Section 6.3, Section 10.5, Appendix 3
May, 2013	SH(NA)-080982ENG-C	Correction Chapter 11, Section 11.4
Nov., 2013	SH(NA)-080982ENG-D	Correction RELEVANT MANUALS, GENERIC TERMS AND ABBREVIATION, Section 8.1, Section 9.1.1, Section 9.1.2 Addition PRODUCT ORGANIZATION
Jul., 2014	SH(NA)-080982ENG-E	Correction RELEVANT MANUALS, GENERIC TERMS AND ABBREVIATION, TERMS, PRODUCT ORGANIZATION, Section 2.1, Section 2.2, Section 2.4, Section 6.1.2, Section 6.1.3, Section 6.3.1, Section 8.1, Section 8.3, Section 9.1.1, Section 9.1.2, Section 9.3, Section 10.5, Section 11.3

Japanese Manual Version SH-080981-F

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CW Workbench
Operating Manual

MODEL	SW1DND-CWWLQ12-O-E
MODEL CODE	13JU71
SH(NA)-080982ENG-E(1407)KWIX	

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